



RCA VICTOR

PERSONAL TELEVISION RECEIVERS — MODELS

**8-PT-7010, 8-PT-7011,
8-PT-7012, 8-PT-7014,
8-PT-7030(T), 8-PT-7031(T),
8-PT-7032(T), 8-PT-7034(T)**

Chassis No. KCS100B, KCS100D or KCS100K
— Mfr. No. 274 —

SERVICE DATA

— 1956 No. T2 —

PREPARED BY COMMERCIAL SERVICE

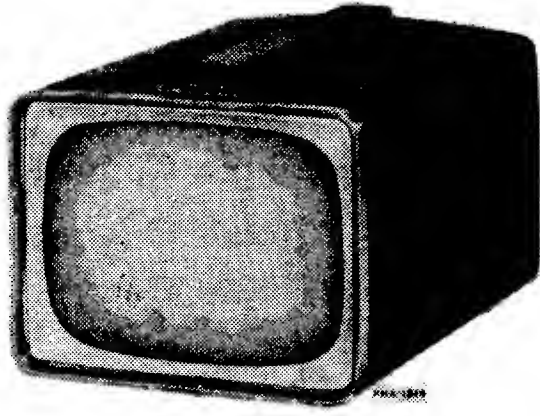
RCA SERVICE CO., INC.

CAMDEN 8, N. J.

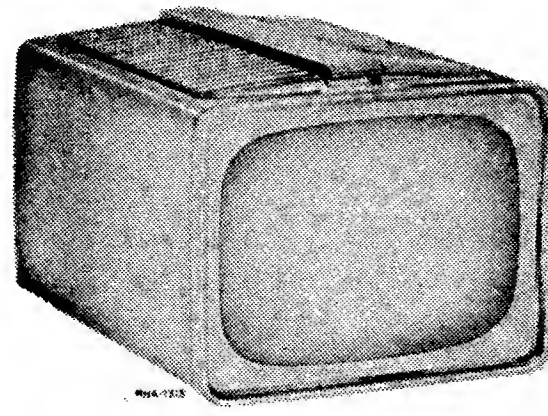
FOR

RADIO CORPORATION OF AMERICA

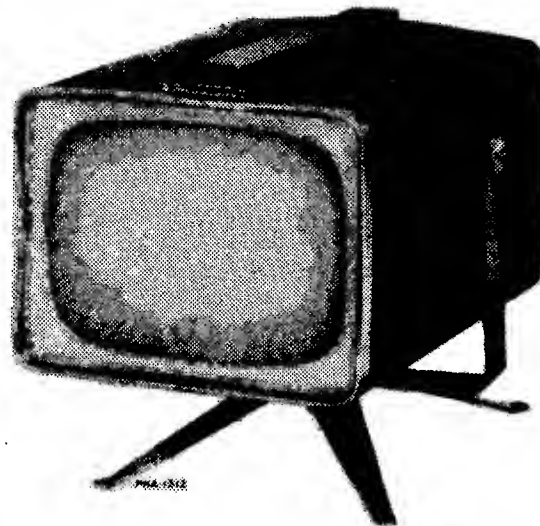
RCA VICTOR TELEVISION DIVISION



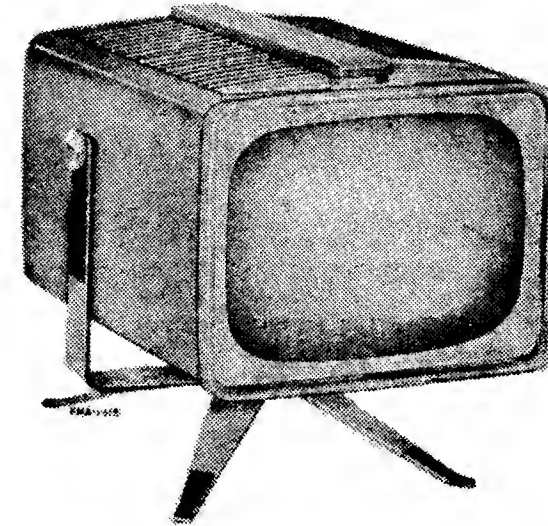
The "PERSONAL"
Models
8-PT-7010—Red
8-PT-7012—Black



The "PERSONAL"
Models
8-PT-7011—Gray
8-PT-7014—Ivory



The "PERSONAL"
Models
8-PT-7030 & T—Red
8-PT-7032 & T—Black



The "PERSONAL"
Models
8-PT-7031 & T—Gray
8-PT-7034 & T—Ivory

GENERAL DESCRIPTION

All models are "Personal" VHF television receivers. Models 8-PT-7030, 7031, 7032 & 7034 include an adjustable stand for viewing at the most desirable angle which may be removed for greater portability. Because of its compact size and light weight the receiver may be readily moved to any location.

These receivers are designed for reception of all 12 VHF channels. Models 8-PT-7030, 7031, 7032 & 7034 have an adjustable-rod-type antenna attached to the receiver cabinet for use in most locations. Connections are provided for use of an external antenna in areas where conditions require its use.

The receivers although extremely compact in size, are

adapted for ease in servicing. The chassis assembly is readily removed from the case and provision is made for separation of the front and rear chassis sections with the receiver still in operation. This feature permits ready accessibility to all components for service purposes.

The chassis incorporates an intercarrier FM sound system which includes a reflex sound circuit whereby the sound I-F stage also acts as the 1st. audio amplifier. A ratio detector; A-F-C horizontal hold; stabilized vertical hold, high gain picture circuits and reduced hazard high voltage supply are additional quality performance features.

ELECTRICAL AND MECHANICAL SPECIFICATIONS

PICTURE SIZE Approx. 36 sq. in. on an 8DP4 Kinescope

TELEVISION R-F FREQUENCY RANGE

All 12 VHF channels, 54 mc. to 88 mc., 174 mc. to 216 mc.

INTERMEDIATE FREQUENCIES

Picture I-F Carrier Frequency 45.75 mc.

Sound I-F Carrier Frequency 41.25 mc.

POWER INPUT 115 Volts AC, 60~

POWER RATING 90 watts

AUDIO POWER OUTPUT RATING 0.5 watts max.

..... 0.15 watts undistorted

VIDEO RESPONSE To 2.1 mc.

ANTENNA INPUT IMPEDANCE 300 ohms balanced

RCA TUBE COMPLEMENT

Tube Used	Function
Tuners KRK55A, KRK55B & KRK55C	
(1) RCA 6U8	R-F Amplifier & 1st I-F Amplifier
(2) RCA 6U8	R-F Oscillator and Mixer

RCA TUBE COMPLEMENT

Tube Used	Function
Main Chassis KCS100B, KCS100D & KCS100K	
(1) RCA 6U8	2nd Picture I-F Amp. & Sync. Output
(2) RCA 6AW8	Video Amplifier & 1st Sync. Amp.
(3) RCA 6U8	Sound I-F Amp., Audio Amp. & Audio Output
(4) RCA 6CM7	Vert. Osc. & Out. (KCS100D) (KCS100K)
RCA 6CG7	Vert. Osc. & Output (KCS100B)
(5) RCA 6CG7	Horizontal Sweep Oscillator and Control
(6) RCA 6BQ6GTB	Horizontal Sweep Output
(7) RCA 1V2	High Voltage Rectifier
(8) RCA 6AX4GTA	Damper
(9) RCA 8DP4	Kinescope

A K604 crystal rectifier is used for the picture second detector.

Two 1N367 crystals are used for the ratio detector and another 1N367 is used as a sound I-F limiter.

A selenium rectifier is used for low voltage rectification.

SECOND EDITION—FIRST PRINTING—10-12-56—SUPERSEDES ALL 1ST EDITION PRINTINGS

CHASSIS DESIGNATIONS

COMPLETE CHASSIS ASSEMBLY	INCLUDES SUBCHASSIS	TUNER	MODELS
KCS100B	KCS100 (Front) KCS100A (Rear)	KRK55A or KRK55B	8-PT-7030 8-PT-7031 8-PT-7032 8-PT-7034
KCS100D	KCS100J (Front) KCS100C (Rear)	KRK55C	8-PT-7010 8-PT-7011 8-PT-7012 8-PT-7014
KCS100K	KCS100J (Front) KCS100A (Rear)	KRK55B	8-PT-7030T 8-PT-7031T 8-PT-7032T 8-PT-7034T

OPERATING CONTROLS (Top)

VHF Channel Selector	}	Dual Control
VHF Fine Tuning		
Sound Volume and On-Off Switch		Single Control
Contrast		Single Control
Brightness		Single Control
Horizontal Hold		Single Control
Vertical Hold		Single Control

NON-OPERATING CONTROLS

Focus	bottom adjustment
Height	bottom adjustment
Vertical Linearity	bottom adjustment
Width	bottom adjustment

HIGH VOLTAGE WARNING

OPERATION OF THIS RECEIVER OUTSIDE THE CABINET INVOLVES A SHOCK HAZARD FROM THE RECEIVER POWER SUPPLIES. WORK ON THE RECEIVER SHOULD NOT BE ATTEMPTED BY ANYONE WHO IS NOT THOROUGHLY FAMILIAR WITH THE PRECAUTIONS NECESSARY WHEN WORKING ON HIGH VOLTAGE EQUIPMENT. MAKE SURE THAT THE GROUNDING SPRING ON THE KINESCOPE MOUNTING STRAP ASSEMBLY IS MAKING CONTACT WITH THE KINESCOPE COATING BEFORE TURNING THE RECEIVER ON. REPLACE ALL INSULATING BOARDS BEFORE REINSTALLING THE CHASSIS IN THE CABINET.

KINESCOPE HANDLING PRECAUTIONS

DO NOT INSTALL, REMOVE OR HANDLE THE KINESCOPE IN ANY MANNER UNLESS SHATTER-PROOF GOGGLES ARE WORN. PEOPLE NOT SO EQUIPPED SHOULD BE KEPT AWAY WHILE HANDLING KINESCOPES. KEEP THE KINESCOPE AWAY FROM THE BODY WHILE HANDLING.

OPERATING INSTRUCTIONS

The following adjustments are necessary when turning the receiver on for the first time.

*1. Extend the rods of the attached cabinet antenna. Make sure the bottom rod section is fully extended. When using an external antenna retract the rods fully.

The external antenna must be disconnected when the attached rod antenna is used.

2. Turn the receiver "ON" and advance the SOUND VOLUME control to approximately mid-position.

3. Set the CHANNEL SELECTOR to the desired channel.

4. Turn the BRIGHTNESS control fully counter-clockwise, then clockwise until a light pattern appears on the screen.

5. Adjust the FINE TUNING control for best pix and the SOUND VOLUME control for suitable volume.

6. Adjust the VERTICAL hold control until the pattern stops vertical movement.

7. Adjust the HORIZONTAL hold control until a picture is obtained and centered.

8. Adjust the PICTURE and BRIGHTNESS controls for suitable picture contrast and brightness.

9. Adjust the antenna rod length, angle and rotation to produce best sound and picture.

10. In switching from one channel to another, it may be necessary to repeat steps 5, 8 and 9.

11. When the set is turned on again after an idle period it should not be necessary to repeat the adjustment if the positions of the controls have not been changed. If any adjustment is necessary, steps number 5 and 9 are generally sufficient.

12. If the positions of the controls have been changed, it may be necessary to repeat steps 2 through 9.

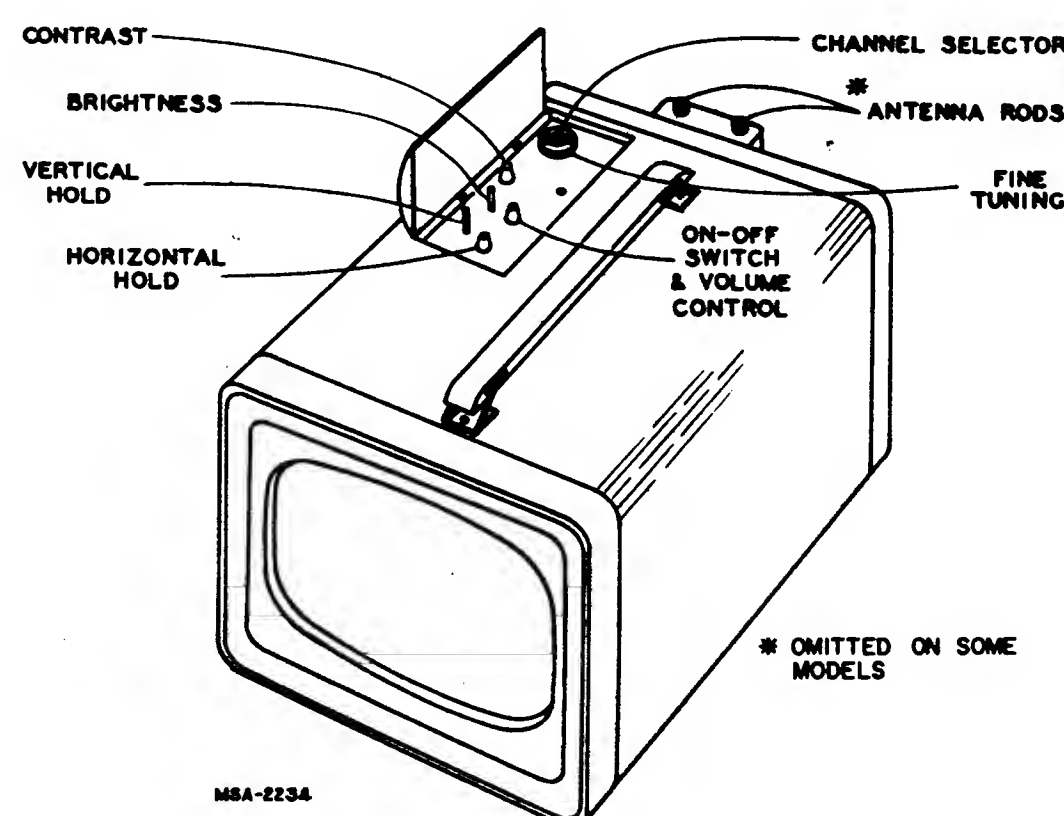


Figure 1—Receiver Operating Controls

UNPACKING.—These receivers are shipped complete in cardboard cartons. The kinescope is shipped in place in the receiver.

Take the receiver out of the carton and remove all packing material. Remove the four red shipping screws under the bottom of the receiver case.

Plug the power cord into the 117 volt a-c power source.

ANTENNA INPUT

The KRK55A, KRK55B & KRK55C tuner units are designed for VHF reception only, with a 300 ohm antenna input provided. Connect a rod type or external antenna to the antenna terminal board on the rear cover of the receiver on models without an attached antenna.

On models with an attached cabinet antenna, the antenna is automatically connected to the tuner input when the bottom rod sections are fully extended.

An external antenna may be connected to the terminals provided on the sides of the cabinet antenna case near the bottom. When using the external antenna retract the rod antenna fully.

Disconnect the external antenna when the rod antenna is being used.

CHECK FOR PROPER OPERATION.—Turn the power switch to the "on" position and check the operation of the receiver.

Each unit has been completely and accurately adjusted at the factory and should operate normally at this point. However, a check of all the various functions should be performed. Adjustment should be made as outlined later, only where an indication of improper operation is evident.

TUBE REPLACEMENT.—The receiver chassis must be removed from the cabinet for replacement of tubes. Follow instructions under CHASSIS REMOVAL on next page.

Refer to CHASSIS SERVICING when tube replacement in the tuner section is required.

ADJUSTMENT LOCATION.—The adjustments for Vertical Linearity, Height, Focus, Width and Horizontal Drive are accessible from the bottom of the receiver cabinet. Their locations are shown in Figure 6.

Adjustments for the R-F oscillator require removal of the control knob cover and case assembly as outlined under CHASSIS REMOVAL.

The adjustment of the 41.25 mc. Sound Boost, F-M Trap, Ion Trap Magnet, Yoke and Centering Magnets require removal of the receiver chassis from the cabinet.

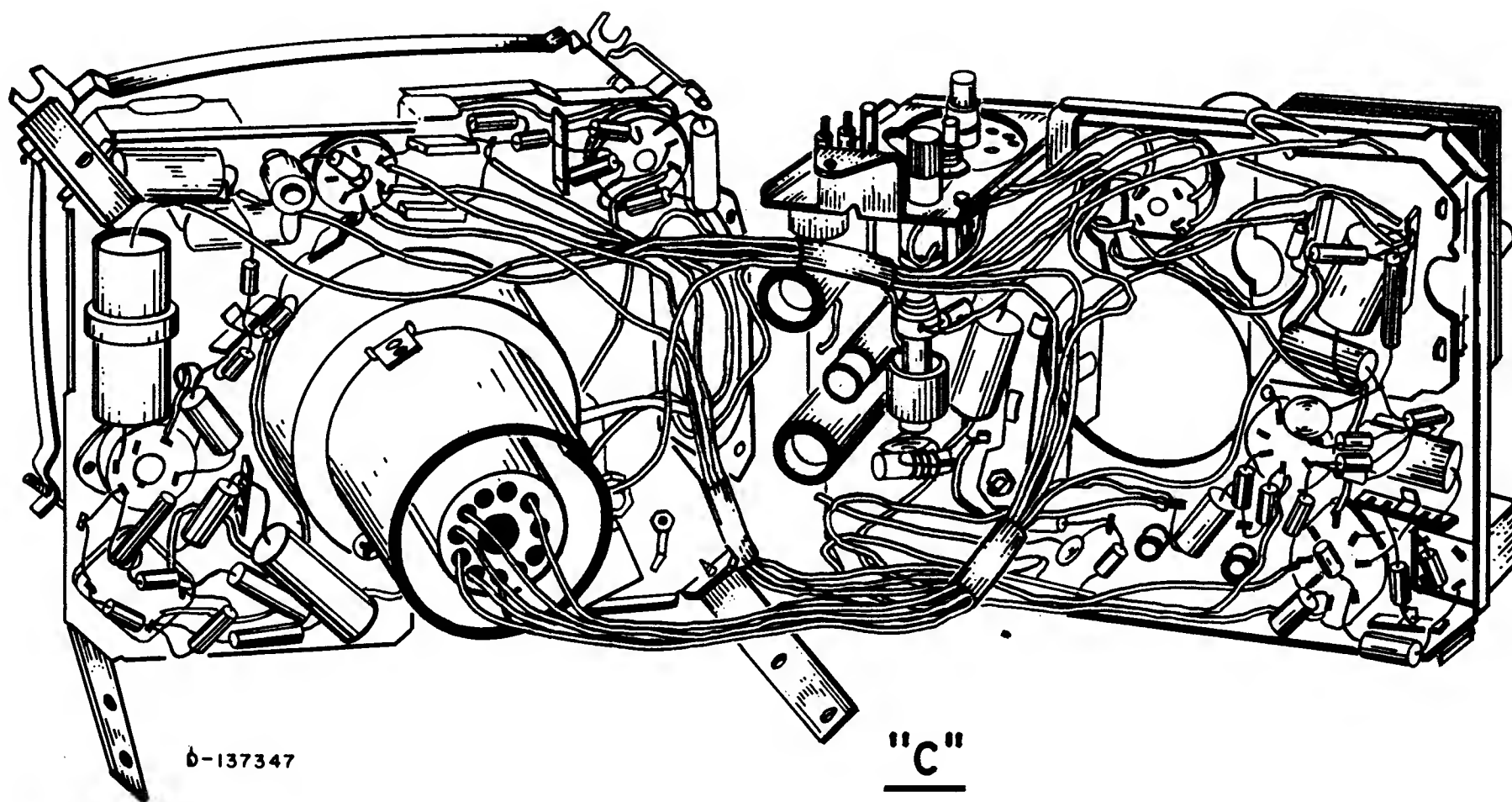
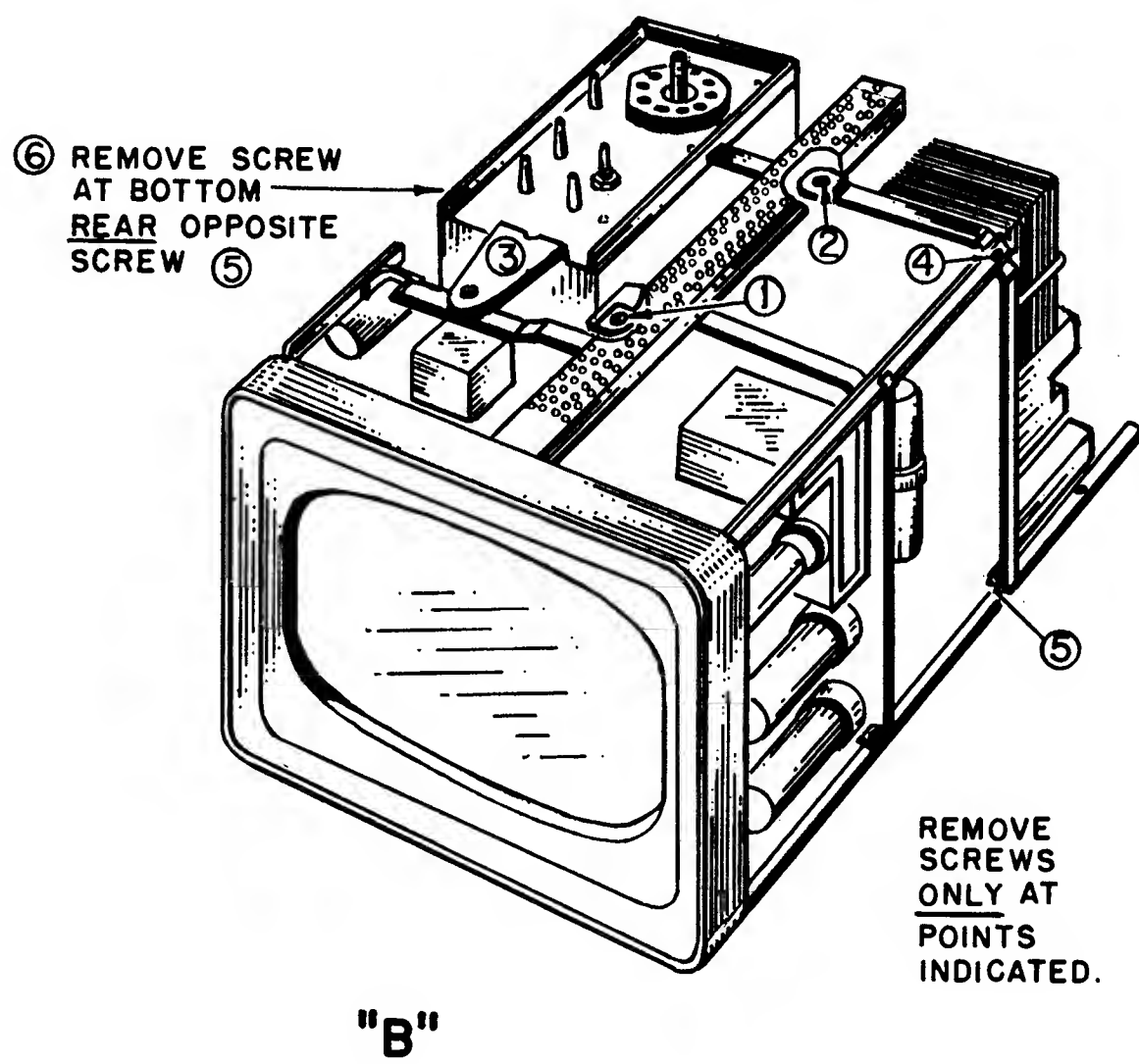
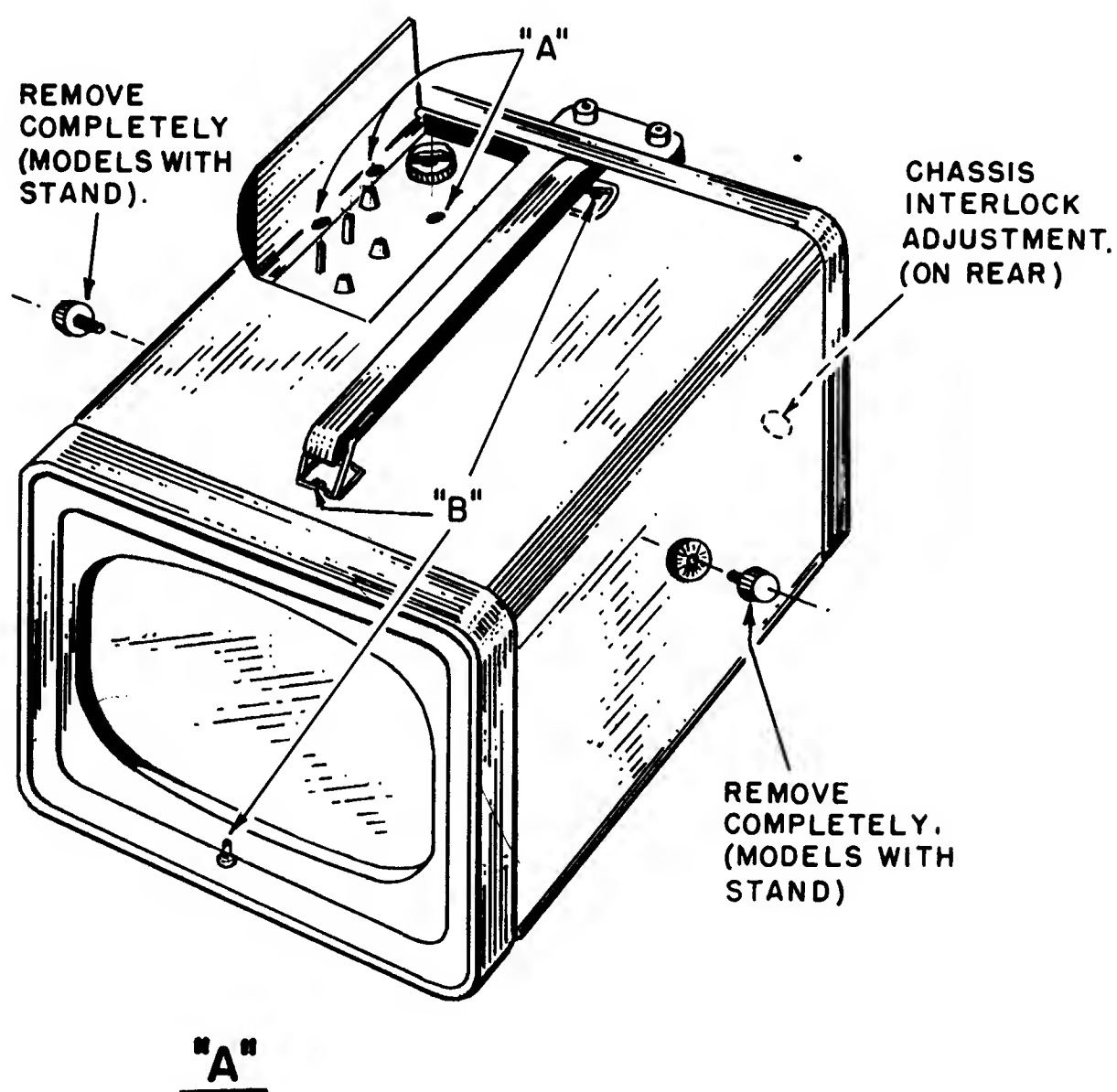


Figure 2—Chassis Removal

CHASSIS REMOVAL.—The chassis must be removed from the cabinet to replace tubes or the kinescope and to perform certain adjustments as explained above.

Models With Attached Stand

Take the receiver off its stand and completely remove the two knurled screws at the sides of the cabinet. Never attempt to remove the chassis unless these two screws are completely removed, as their projection inside the cabinet may result in internal damage as the chassis is pulled from the case. See Figure 2A.

All Models

Remove the knobs on the controls located in the cover and case assembly and take out the three screws holding the assembly to the cabinet. Their location is indicated at "A" in Figure 2A. Lift the control case and cover directly upward to remove.

Take off the carrying handle by removing the two screws at the ends of the handle. Also, remove the screw at the bottom front edge of the receiver case. These three screws are indicated at "B" in Figure 2A.

The antenna lead must be internally disconnected on the following models before removing the chassis from the cabinet: Models 8-PT-7010, 8-PT-7011, 8-PT-7012 and 8-PT-7014.

Remove the plate to which the antenna terminal board is fastened. Pull the clips at the end of the antenna lead off the terminals on the rear of the antenna or terminal board assembly.

On all models not listed above, the antenna will automatically disengage as the receiver chassis is removed from the cabinet.

Slide the chassis assembly, which includes the front frame and kinescope, out of the receiver cabinet. The A.C. interlock will automatically disengage as the chassis is removed.

CHASSIS SERVICING.—Adjustment of the yoke position, centering magnets and the ion trap magnet may be made with the chassis completely assembled. The location of these adjustments is shown in Figure 4.

Replacement of the tubes in the tuner section requires removal of the speaker. To remove the speaker, loosen the speaker clamp screw shown in Figure 4 and slide the speaker out of its clamp. This will allow room to make tube replacement in the tuner unit.

Service which requires circuit tracing or voltage measurements must be performed with the front and rear chassis

sections separated. To do this, remove the six (6) self-tapping screws holding the front and rear chassis sections together. See Figure 2B. The positions of the insulating boards should be noted for replacement when reassembling the chassis.

Unplug the kinescope socket and slide the rear chassis section off the end of the kinescope neck. Turn the chassis around making the bottom wiring side visible. Slip the kinescope socket leads out of the hole in the chassis, through which they are normally dressed, and pass the socket through the large opening in the chassis and reconnect to the kinescope. With the chassis in this position, which is shown in Figure 2C and Figure 3, all points will be accessible for servicing. Greater separation of the two chassis sections may be accomplished by the use of a short extension cable for the kinescope leads if desired.

REPLACING THE CHASSIS IN THE CABINET.—Replacement of the chassis in the cabinet is simply a reversal of the removal procedure with several important additional steps to be performed.

Make sure all insulating boards have been replaced in their proper positions. The boards are provided to prevent any thin metal object, which may fall or be inserted through the cabinet ventilating louvres, from coming in contact with high voltage circuits or from causing a short circuit to the cabinet.

If the speaker was removed for tube replacement in the tuner, the speaker must be properly positioned before replacement of the chassis in the cabinet. The face of the speaker baffle must be exactly four and one-quarter inches ($4\frac{1}{4}$ ") from the centerline of the chassis as shown in Figure 4. The chassis will not slide into the case properly if the speaker extends out too far. When the speaker does not extend sufficiently, sound echoes may occur within the cabinet.

The A.C. interlock screw, located under the snap-out button on the cabinet rear, should be readjusted if the front and rear chassis sections were separated when servicing. Refer to Figure 2A for adjustment location. Turn the adjustment screw fully counter-clockwise moving the interlock plug toward the cabinet rear. Proper alignment of the interlock plug and the antenna terminals (on some Models) is automatically achieved, by the locating stud on the interlock, as the chassis is inserted in the cabinet. After the chassis has been replaced in the cabinet and securely fastened, the A.C. interlock adjustment screw should be turned fully clockwise to

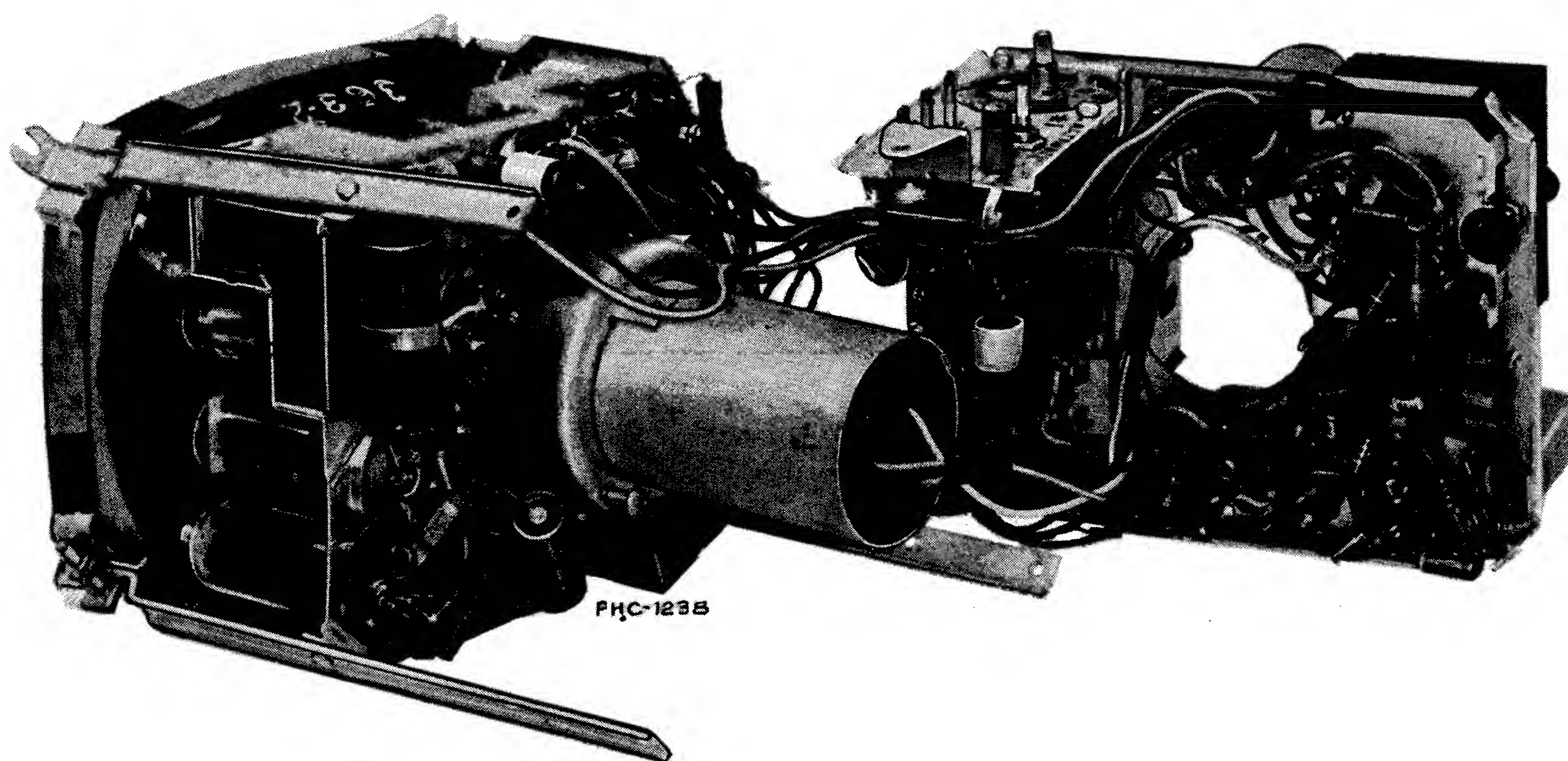


Figure 3—Front and Rear Chassis Sections Separated for Servicing

insure proper contact in its receptacle. On those Models previously noted under CHASSIS REMOVAL, reconnect the antenna leads and replace the plate on the rear of the cabinet. When replacing the screws holding the chassis in the cabinet, the screw under the bottom front edge of the cabinet should be replaced first.

ION TRAP MAGNET ADJUSTMENT.—Set the ion trap on the paper sleeve approximately in the position shown in Figure 4. Turn the Brightness Control fully clockwise and the Contrast Control fully counter-clockwise. Starting at this position adjust the magnet by moving it forward or backward at the same time rotating it slightly around the neck of the kinescope for the brightest raster on the screen. This is accomplished by moving the sleeve located between the ion trap magnet and the kinescope neck using long-nose pliers. This adjustment may be accomplished on later production receivers by removing the cabinet antenna assembly or plate fastened to the cabinet rear. A large opening, under the antenna or plate assembly, will allow access to the sleeve used for ion trap magnet adjustment without necessitating removal of the chassis from the cabinet.

Reduce the Brightness Control setting until the raster is slightly above average brilliance and readjust the ion trap magnet for maximum brightness. The final positioning of the ion trap magnet should be made with the Brightness Control at the maximum clockwise position with which good line focus can be maintained in the center area of the raster.

The sleeve should not protrude more than $\frac{3}{8}$ " beyond the yoke hood, when the ion trap is finally adjusted, as it may hit the cabinet rear as the chassis is reinstalled in the cabinet.

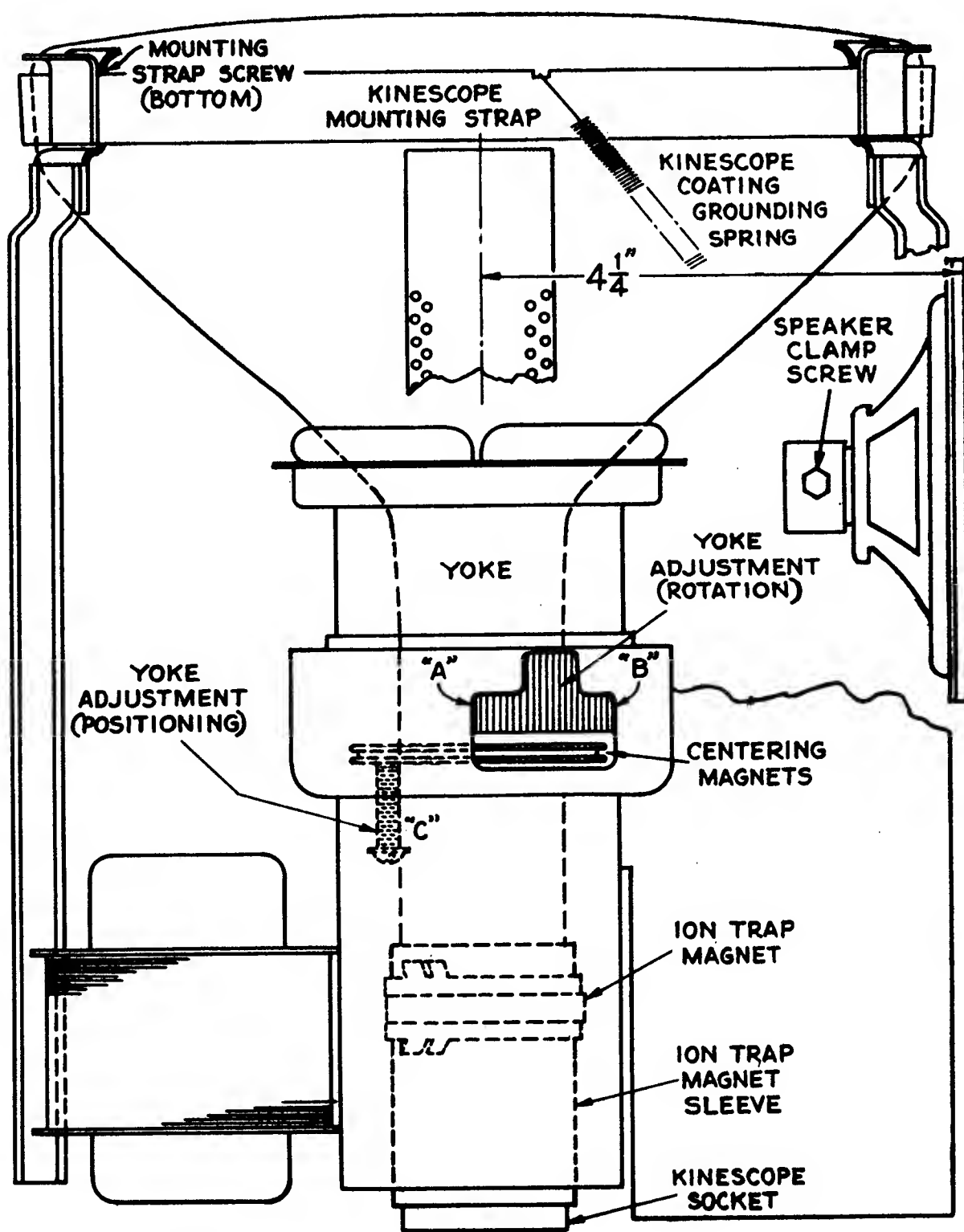


Figure 4—Magnet Adjustments

DEFLECTION YOKE ADJUSTMENT.—If the lines of the raster are not horizontal or squared with the picture mask, rotate the deflection yoke until this condition is obtained.

Rotate the yoke by inserting a screwdriver into the serrated collar at either point "A" or point "B" shown in Figure 4. Pry against either one edge or the other of the opening in the yoke hood to rotate the yoke in the desired direction.

It may be necessary to loosen the screw, indicated at point "C" in Figure 4 several turns to permit the yoke to move freely. Tighten the screw after adjustment has been made.

PICTURE ADJUSTMENTS.—It will now be necessary to obtain a picture (or test pattern) in order to make further adjustments.

When the horizontal oscillator is operating properly it should be possible to tune in and sync the picture.

CHECK OF HORIZONTAL OSCILLATOR ADJUSTMENT.—Using a moderately strong signal, turn the Horizontal Hold Control clockwise until the picture is out of sync, with approximately twelve bars slanting downward to the left being obtained before full clockwise rotation of the control is reached.

Turn the control counter-clockwise slowly. The number of black bars will be gradually reduced and when only $1\frac{1}{2}$ to 3 bars sloping downward to the left are obtained, the picture will pull into sync upon slight additional counter-clockwise rotation of the control. The picture should remain in sync for approximately two full turns of the control in the counter-clockwise direction. Continue to turn the control in the counter-clockwise direction until the picture falls out of sync. Rotation beyond the fall-out point should produce between 2 and 5 bars before interrupted oscillation (motorboating) occurs. Interrupted oscillation should be reached before full counter-clockwise rotation of the control.

When the receiver passes the above checks and the picture is normal and stable, the horizontal oscillator is properly adjusted. Skip "Adjustment of Horizontal Oscillator" and proceed with "Centering Adjustment."

ADJUSTMENT OF HORIZONTAL OSCILLATOR.—If in the above check the receiver failed to hold sync over two full turns of counter-clockwise rotation of the control from the pull-in point, it will be necessary to make the following adjustments.

The width and drive adjustments should be properly set, as explained in paragraph below, before adjusting the sine wave coil.

Set the sine wave coil L155 fully counter-clockwise.

Adjustment of the horizontal hold control in the counter-clockwise direction will show a multiple number of bars before "motorboat" occurs. Adjust the sine wave coil L155 until 3 or 4 bars are present before "motorboat" occurs, when the horizontal hold control is rotated counter-clockwise from the fall-out point.

If it is impossible to sync the picture it will be necessary to align the Horizontal Oscillator by the method outlined in the alignment procedure on page 14.

CENTERING ADJUSTMENT.—The electrostatic focus kinescope is provided with special centering magnets. These magnets are in the form of two discs mounted in back of the deflection yoke. See Figure 4. To shift the position of the picture, place a small screwdriver in the teeth of one of the discs and rotate one disc with respect to the other. To shift the picture in a desired direction rotate both discs simultaneously. By alternately rotating one disc with respect to the other, then rotating the entire assembly around the neck of the kinescope, proper centering of the picture can be obtained.

WIDTH AND DRIVE ADJUSTMENTS.—Set the Horizontal Hold Control at the "pull-in" point. Turn the Brightness Control fully clockwise. Adjustment of the horizontal drive trimmer affects the high voltage applied to the kinescope. In

order to obtain the highest possible voltage, hence the brightest and best focused picture, set the Width Coil L157 to overscan approximately $\frac{1}{4}$ " at each side of the picture. Adjust the Horizontal Drive trimmer C170 counter-clockwise until a bright vertical line appears in the center of the picture. Then turn the drive trimmer clockwise until the bright line just disappears. If no line is obtained set the drive trimmer at maximum counter-clockwise position.

At normal brightness readjust the Width Control L157 to obtain $\frac{1}{4}$ " overscan at each side if necessary, with normal line voltage. (i.e., 117 volts). Recheck the Drive Trimmer C170 as was done previously.

HEIGHT AND VERTICAL LINEARITY ADJUSTMENTS.—

Adjust the Height Control R156, located on the bottom of the chassis, until the picture overscans approximately $\frac{1}{4}$ " at both top and bottom. Adjust the Vertical Linearity Control R158, until the picture or test pattern is symmetrical from top to bottom. Adjustment of either control will require a readjustment of the other. Readjust the centering of the picture, after completing the above adjustments, to realign the picture in the mask.

FOCUS.—Turn the Contrast Control fully counter-clockwise. Adjust the Focus Control for sharpest focus in the center portion of the screen. The Brightness Control should be advanced as far clockwise as possible while still maintaining sharp focus in the center portion of the raster.

SOUND AND PICTURE TRACKING and R-F OSCILLATOR ADJUSTMENTS.—A condition of weak sound at best picture, or poor picture at maximum sound, should not be interpreted as R-F oscillator misadjustment. Should this condition exist the setting of the 41.25 mc. adjustment in the tuner should be checked. Using a weak signal (if necessary use an attenuating pad to decrease signal strength) tune the fine tuning control for maximum picture signal. If it is impossible to tune through the maximum signal point, readjust the R-F oscillator on the channel being used until this can be accomplished. Adjust L48 the 41.25 mc. adjustment to obtain maximum sound output. Refer to Figure 5 for adjustment location. Complete oscillator adjustment should be made only after the above check and adjustment of L48, if necessary, have been performed.

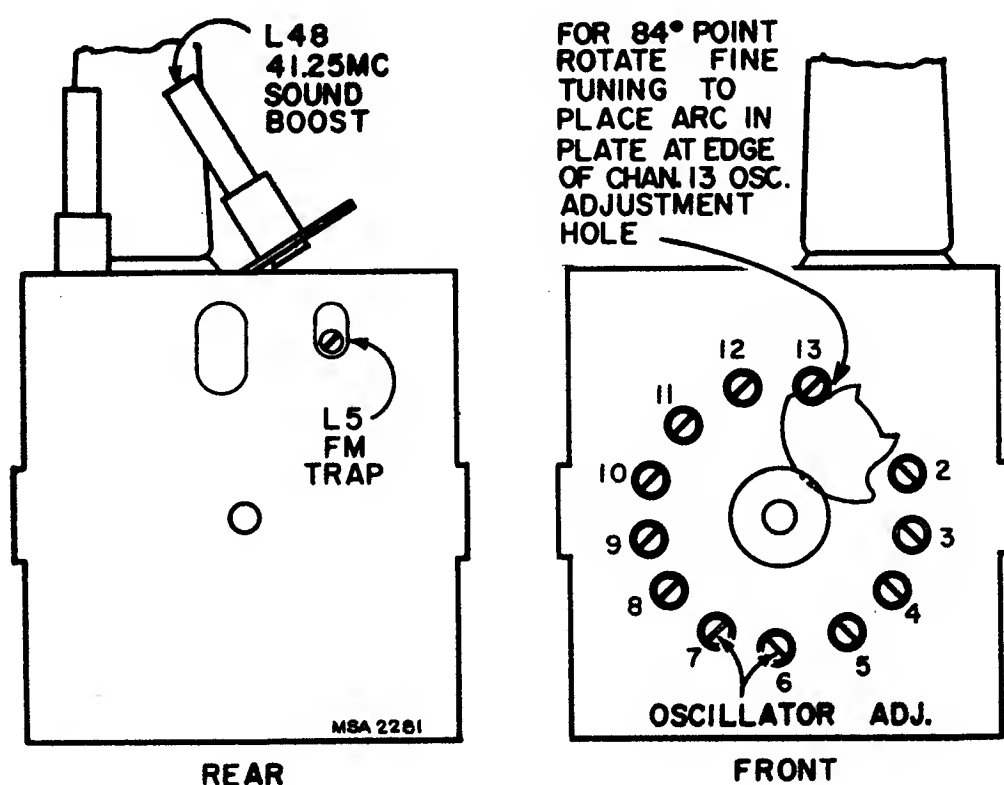


Figure 5—Sound Boost and R-F Oscillator Adjustments

The control cover and case assembly must be removed to make R-F oscillator adjustments. Remove the knobs on the operating controls and take out the control cover and case assembly as explained previously under "CHASSIS REMOVAL." Set the fine tuning control to a point 84° from full counter-clockwise rotation of the control as indicated in Figure 6. Switch to all available stations to see that the oscillator is adjusted to the proper frequency on all channels.

If adjustment is required, this should be made as outlined in the method under tuner alignment on page 12, beginning with Channel 13 and proceeding downward to Channel 2. The location of the adjustments for the individual channels are shown in Figure 5. The fine tuning control should not be changed from the 84° point when making oscillator adjustments.

FM TRAP ADJUSTMENT.—In some instances interference may be encountered from a strong FM station signal. A trap is provided to eliminate this type of interference. To adjust the trap tune in the station on which the interference is observed and adjust the FM trap for minimum interference in the picture. The trap is L5 and is located on the rear of the tuner unit, see Figure 5.

CAUTION.—In some receivers, the FM trap L5 will tune down into channel 6 or even into channel 5. Needless to say, such an adjustment will cause greatly reduced sensitivity on these channels. If channels 5 or 6 are to be received, check L5 to make sure that adjustment does not affect sensitivity on these two channels.

KINESCOPE AND SAFETY GLASS CLEANING.—The front safety glass or plastic window may be removed to allow for cleaning of the kinescope faceplate and the safety glass or window if required.

To do this the chassis assembly must be removed from the cabinet (See section on CHASSIS REMOVAL). With the chassis out of the cabinet remove the three screws holding the front mask and frame to the kinescope mounting strap assembly.

The kinescope faceplate and the safety glass or plastic window should only be cleaned with a soft cloth and clear water. Care should be taken not to scratch or mar the surface of the plastic type window.

KINESCOPE REPLACEMENT.—Do not install, remove, or handle the kinescope in any manner, unless shatterproof goggles are worn. People not so equipped should be kept away while handling the kinescope. Keep the kinescope away from the body while handling.

Remove the chassis from the cabinet as outlined under CHASSIS REMOVAL. Take off the front safety glass frame by removing the three screws holding the frame to the kinescope mounting strap. Turn the screw shown at point "C" in Figure 4, counter-clockwise moving the yoke away from the bell of the kinescope. Take off the kinescope socket, the ion trap magnet with its sleeve and disconnect the high voltage lead.

Loosen the screw on the kinescope mounting strap and slide the kinescope out of the yoke.

Install the new kinescope and tighten the screw on the strap around the front edge of the kinescope. Turn the yoke positioning screw clockwise to bring the yoke forward against the kinescope bell. Replace the front safety glass frame, ion trap magnet and sleeve and the kinescope socket. The sleeve between the kinescope neck and the ion trap magnet should not extend more than $\frac{3}{8}$ " beyond the yoke hood after adjustment of the ion trap magnet has been made.

EXTERNAL ANTENNA.—Models without an attached cabinet antenna provide a terminal board mounted on the cabinet rear. A rod type antenna, or any VHF antenna may be connected to the antenna board terminals.

The same antenna types mentioned above may also be used on models having an attached rod antenna. For these models connect the external antenna to the terminals at the sides of the antenna assembly near the bottom. The rods of the attached antenna must be fully retracted into the antenna case when using an external antenna. When using the attached rod antenna, any external antenna should be disconnected from the receiver.

FRONT CHASSIS TUBE VIEW

8-PT-7010 to 8-PT-7034T Incl.

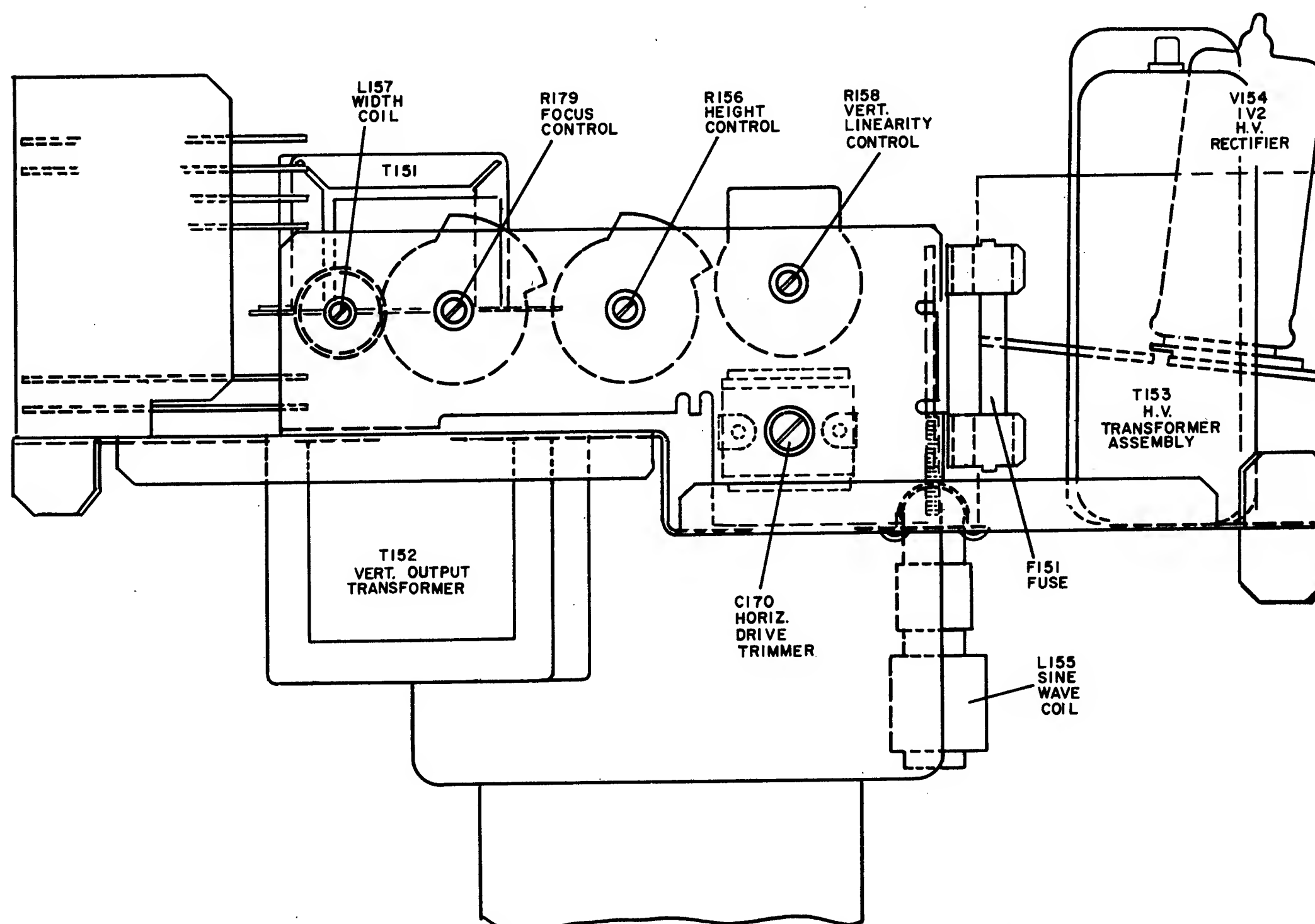
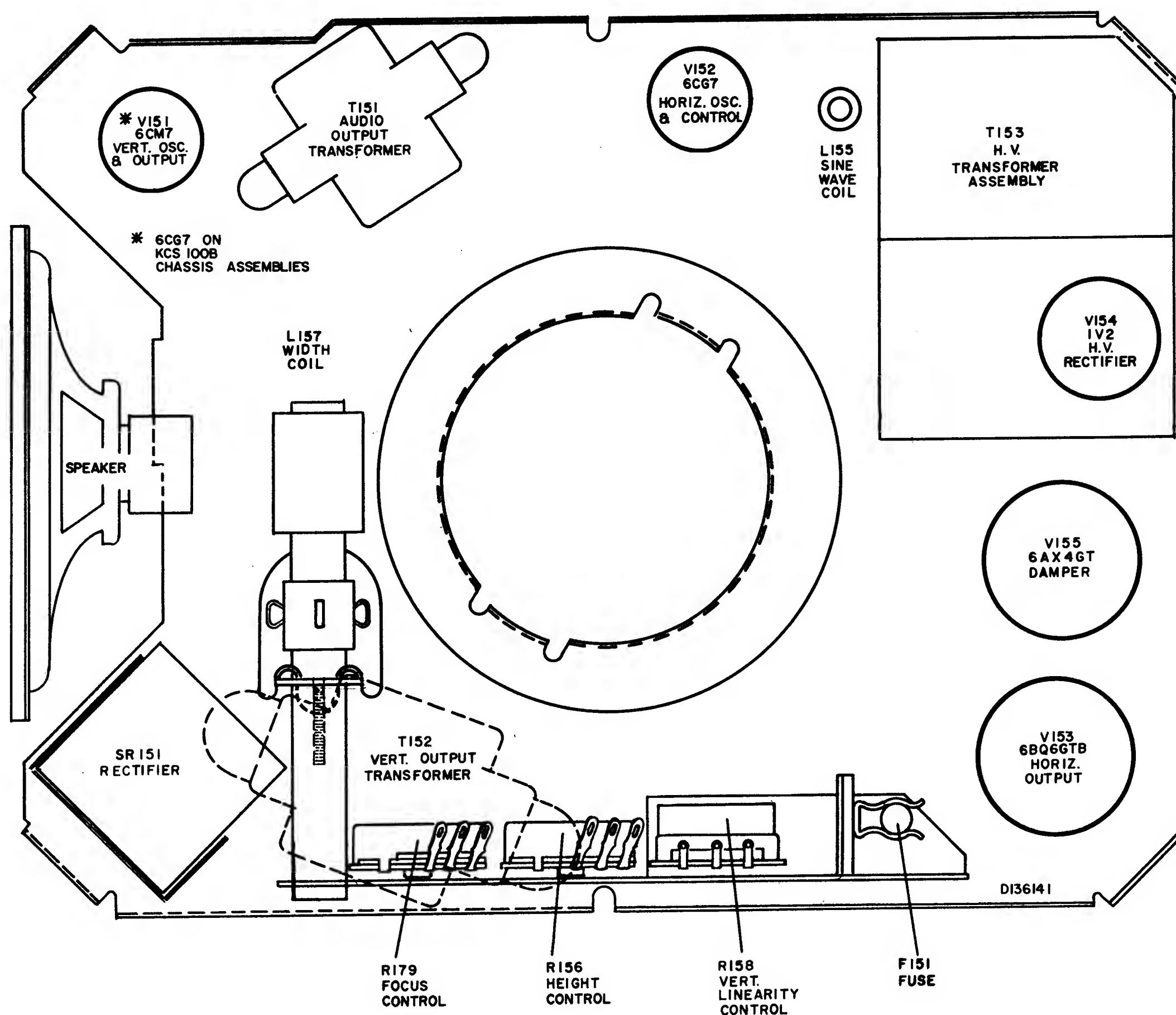


Figure 6—Front Chassis (Tube side)

REAR CHASSIS TUBE VIEW

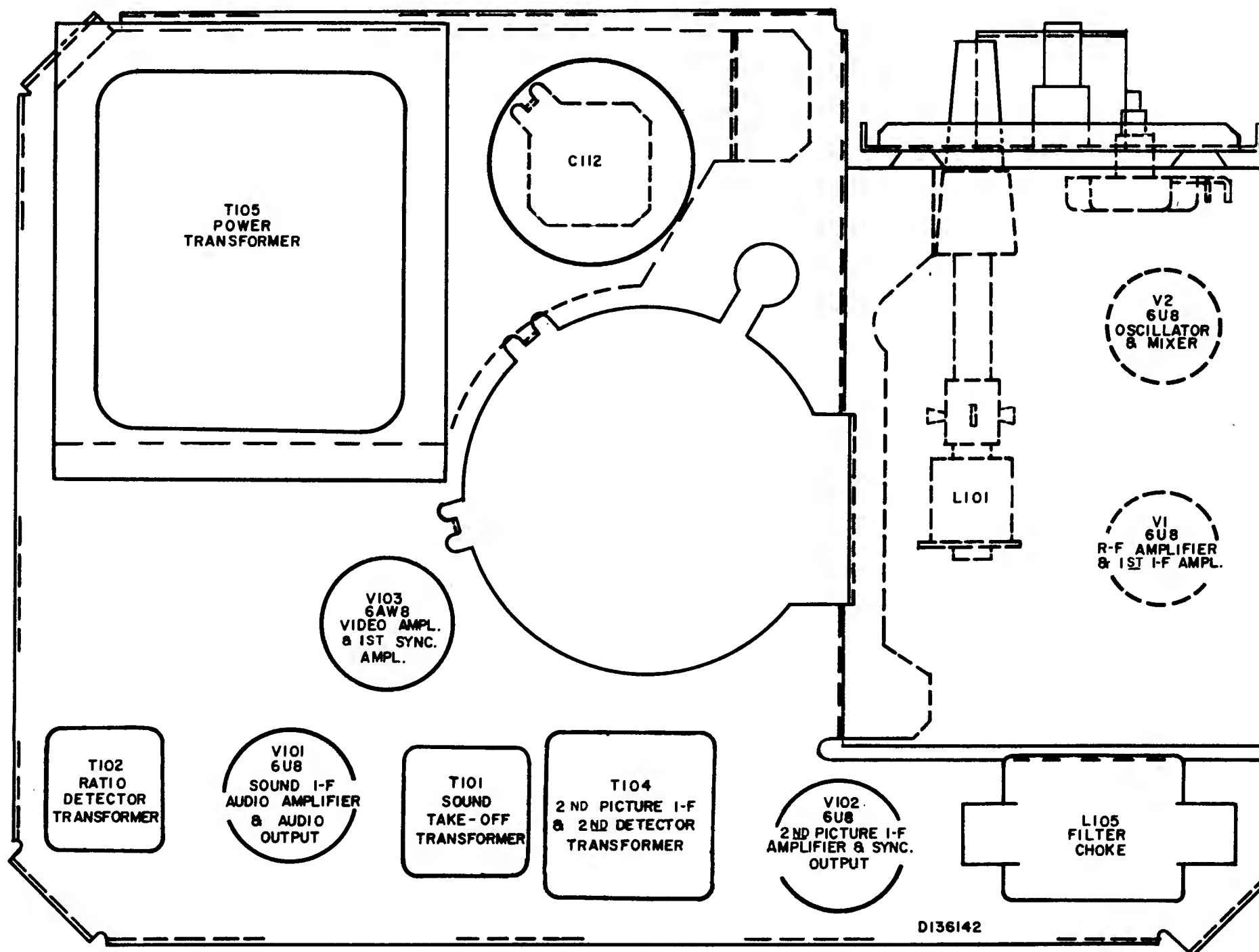
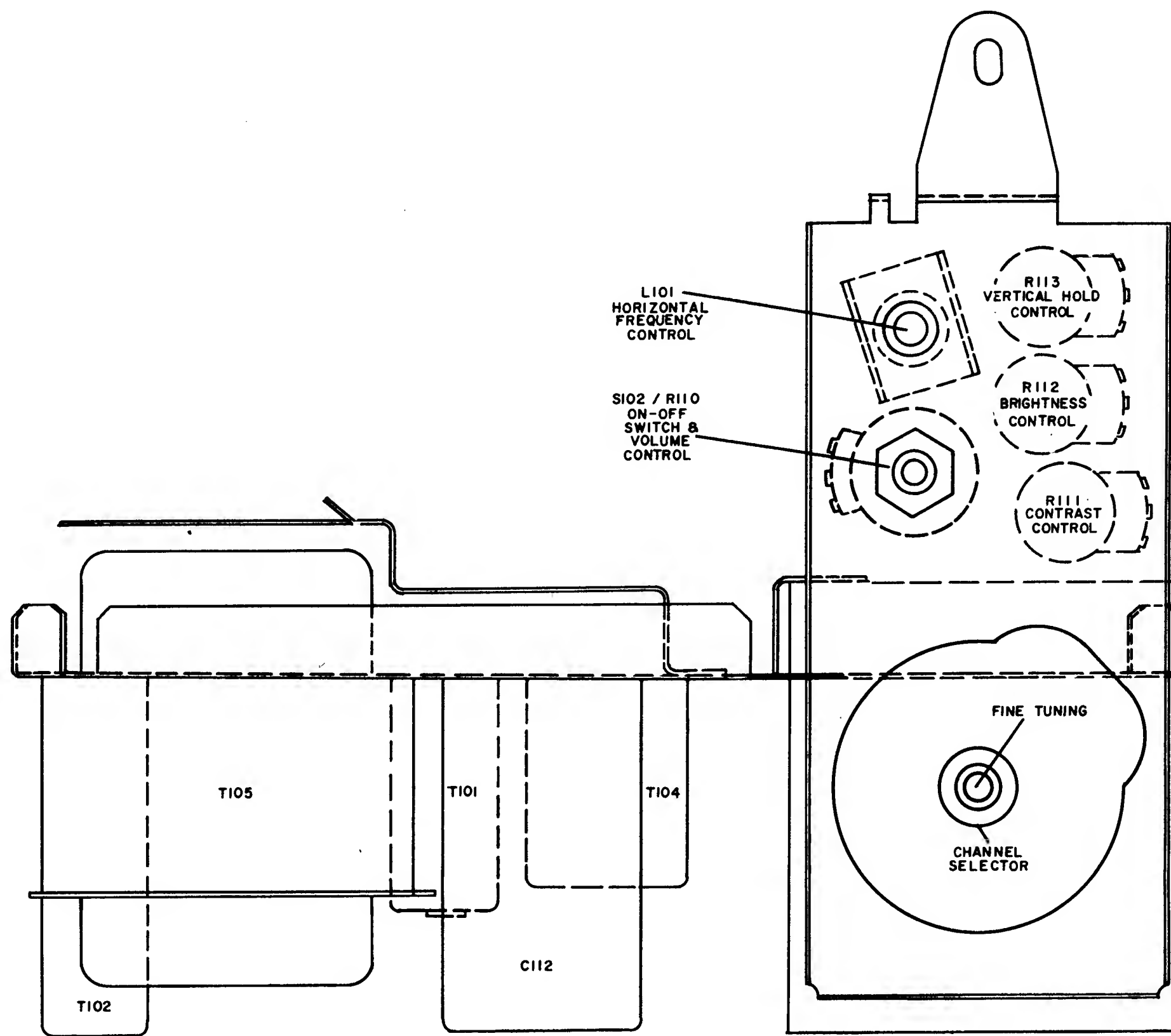


Figure 7—Rear Chassis (Tube side)

FRONT CHASSIS WIRING VIEW

8-PT-7010 to 8-PT-7034T Incl.

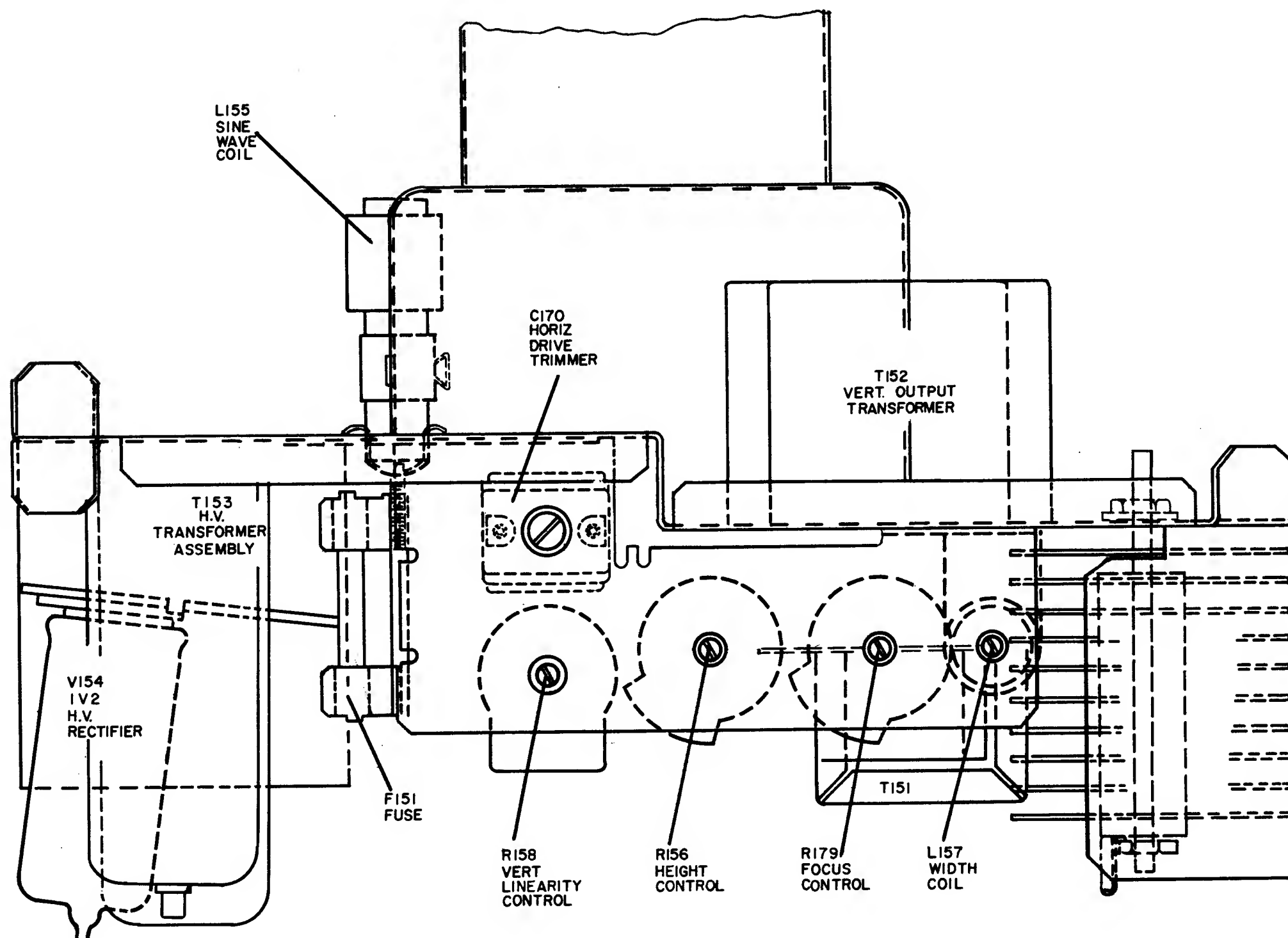
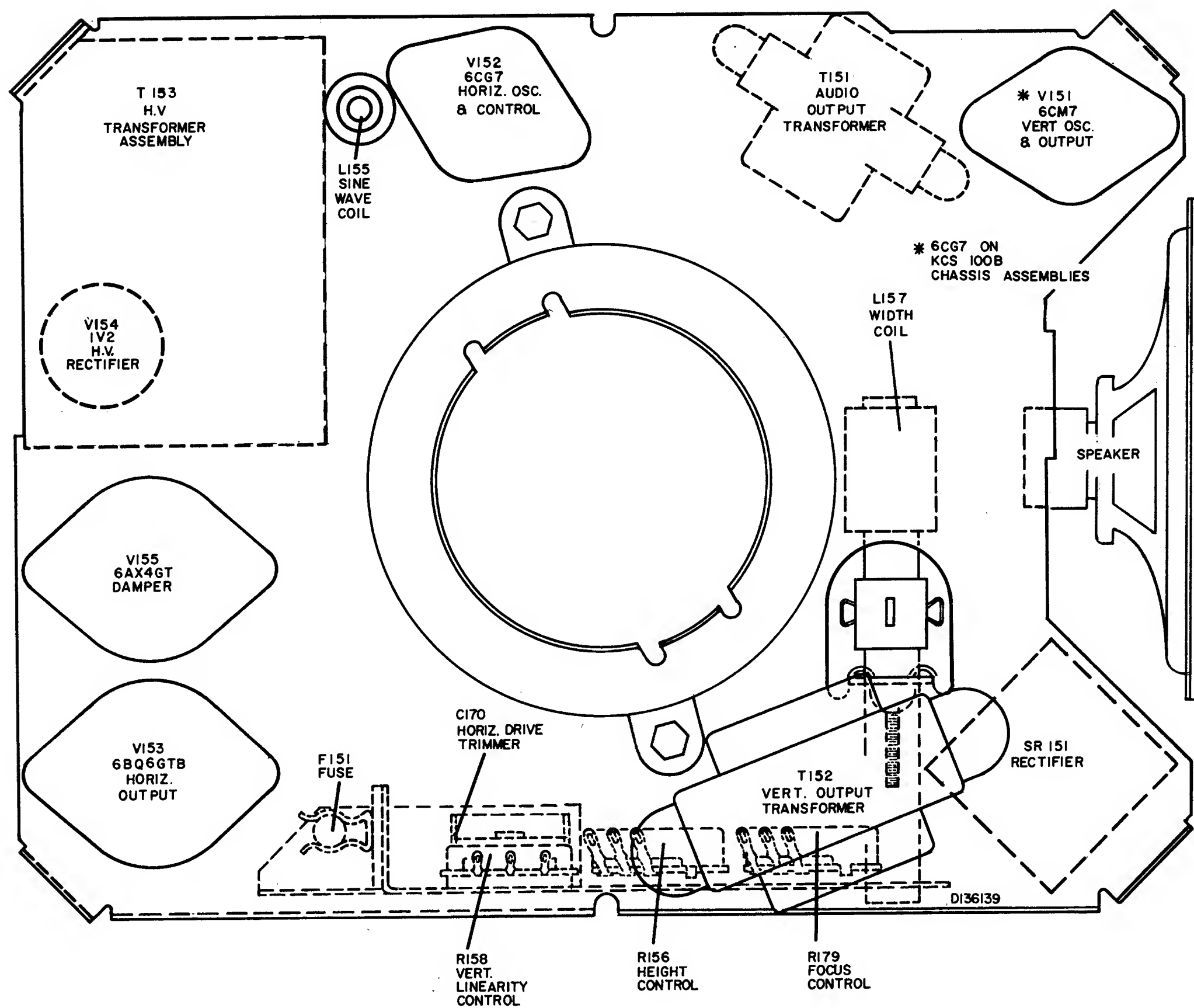


Figure 8—Front Chassis (Wiring side)

REAR CHASSIS WIRING VIEW

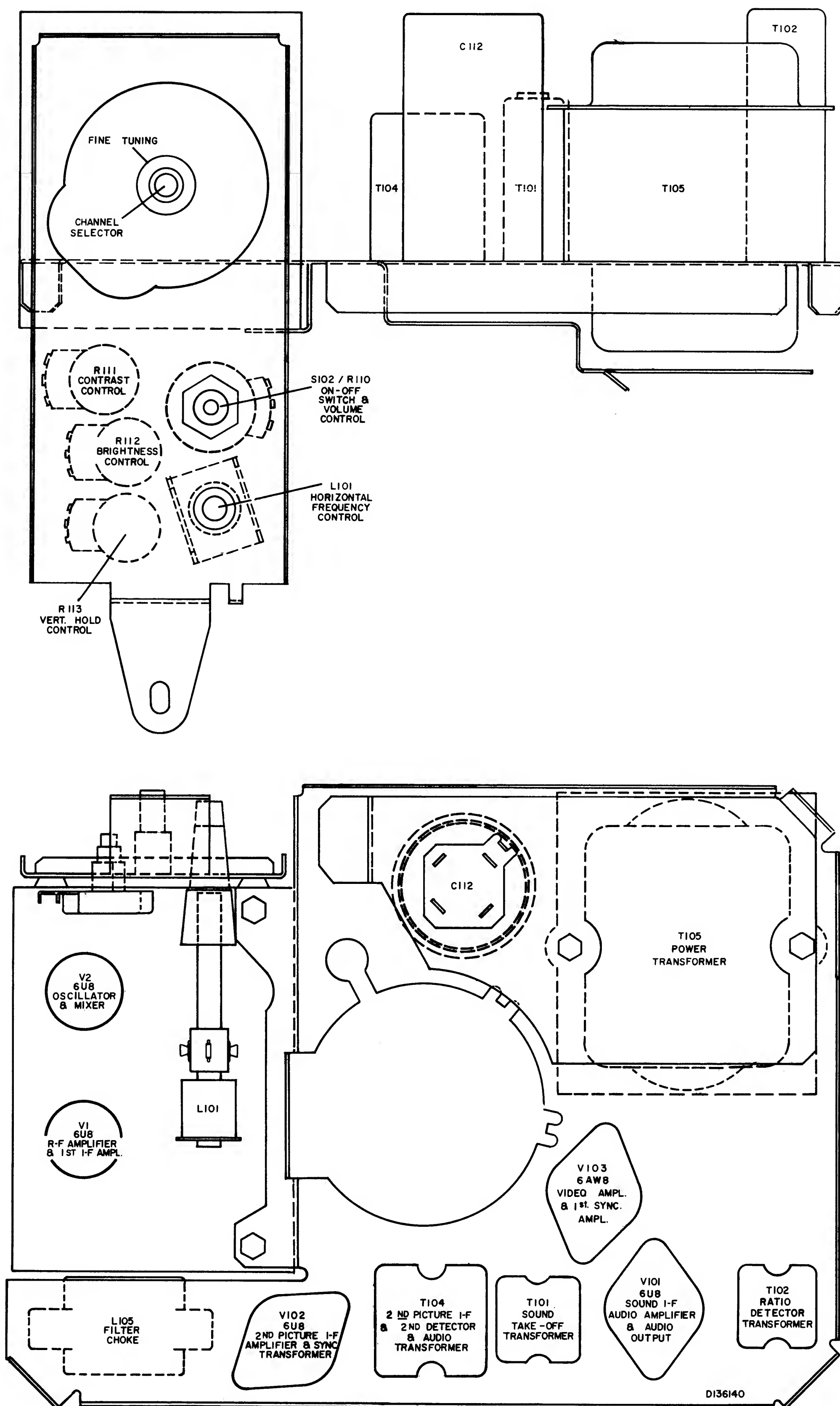


Figure 9—Rear Chassis (Wiring side)

TEST EQUIPMENT.—To properly service the television chassis of these receivers, it is recommended that the following test equipment be available.

VHF Sweep Generator meeting the following requirements: RCA WR-59C or equivalent.

(a) Frequency Ranges

- 35 to 90 mc., 1 mc. to 12 mc. sweep width
170 to 225 mc., 12 mc. sweep width

- (b) Output adjustable with at least .1 volt maximum.
(c) Output constant on all ranges.
(d) "Flat" output on all attenuator positions.

VHF Signal Generator to provide the following frequencies with crystal accuracy: RCA WR-89A or equivalent.

(a) Intermediate frequencies

- 4.5 mc. and 41.25 mc. to 60 mc.

(b) Radio frequencies

Channel Number	Picture Carrier Freq. Mc.	Sound Carrier Freq. Mc.	Receiver R-F Osc. Freq. Mc.
2.....	55.25.....	59.75.....	101
3.....	61.25.....	65.75.....	107
4.....	67.25.....	71.75.....	113
5.....	77.25.....	81.75.....	123
6.....	83.25.....	87.75.....	129
7.....	175.25.....	179.75.....	221
8.....	181.25.....	185.75.....	227
9.....	187.25.....	191.75.....	233
10.....	193.25.....	197.75.....	239
11.....	199.25.....	203.75.....	245
12.....	205.25.....	209.75.....	251
13.....	211.25.....	215.75.....	257

- (c) Output of these ranges should be adjustable and at least .1 volt maximum.

VHF Heterodyne Frequency Meter with crystal calibrator if the signal generator is not crystal controlled.

Cathode Ray Oscilloscope.—RCA WO-88A, WO-91A or equivalent. A pre-amplifier is required if Antenna Matching section alignment is performed.

Electronic Voltmeter.—RCA "VoltOhmyst"® or equivalent.

TUNER R-F ALIGNMENT.—Connect a 180 ohm resistor between the screen and plate, pins 3 and 6, of the mixer section of V2. This may be accomplished by connecting the resistor from the terminal on L50 nearest to V2, to the feed-thru capacitor C29, refer to Figures 11 and 48. On KRK55A tuners connect the resistor across the two terminals on L50 nearest to V2.

Connect another 180 ohm resistor across L47, from the plate pin 6 of V1, to the junction of L47 and L48.

Connect the oscilloscope to the test point TP1 on top of the tuner unit. Set the oscilloscope to maximum gain.

Ground the AGC terminal on the tuner to the tuner case with a short jumper.

Set the channel selector switch to channel 13.

The limits for oscillator injection voltage are 1.5 volts minimum and not exceeding a maximum of 3.5 volts. Since there is no adjustment for varying the oscillator injection voltage, a check for injection voltage being within limits should be made after proper oscillator tracking has been established.

Turn the fine tuning control to a point approximately 84° from its maximum counter-clockwise position as shown in Figure 13. This setting is important and should not be overlooked or changed during alignment.

Adjust L46 for proper oscillator frequency, 257 mc. This may be done in several ways. The easiest way and the way which is recommended in this procedure is to use the signal

generator as a heterodyne frequency meter and beat the oscillator against the signal generator. To do this, tune the signal generator to 257 mc. with crystal accuracy. Insert one end of a piece of insulated wire into the top of the oscillator tube shield. Connect the other end of the wire to the "R-F IN" terminal of the signal generator. Adjust L46 to obtain an audible beat with the signal generator.

Switch to channel 12 and adjust L45 to obtain proper channel 12 oscillator frequency. Continue down to channel 8, adjusting the appropriate oscillator slug to obtain the proper frequency on each channel.

Connect the sweep generator through a suitable attenuator pad, as shown in Figure 10, to the input terminals of the antenna matching unit.

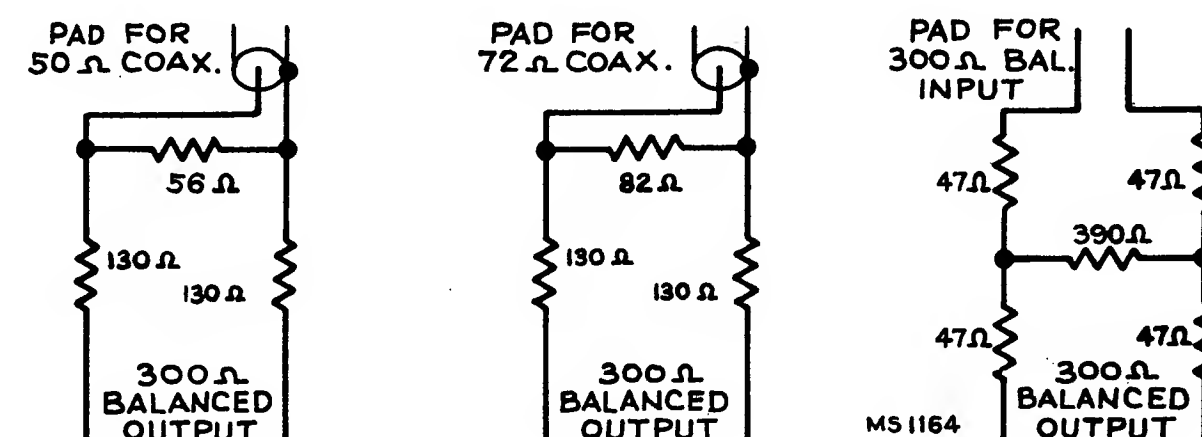


Figure 10—Sweep Attenuator Pads

Connect the signal generator loosely to the antenna terminals.

Set the sweep generator to cover channel 8.

Set the oscilloscope to maximum gain and use the minimum input signal which will produce a usable pattern on the oscilloscope. Excessive input can change oscillator injection during alignment and produce consequent misalignment even though the response as seen on the oscilloscope may look normal.

Insert markers of channel 8 picture carrier and sound carrier, 181.25 mc. and 185.75 mc.

Adjust C9, C10 and C14 for approximately correct curve shape frequency and band width. See Figures 12 and 13.

C9 tunes the R-F amplifier plate circuit and affects the frequency of the pass band most noticeably. C14 tunes the mixer grid circuit and affects the tilt of the curve most noticeably. C10 is the coupling adjustment and hence primarily

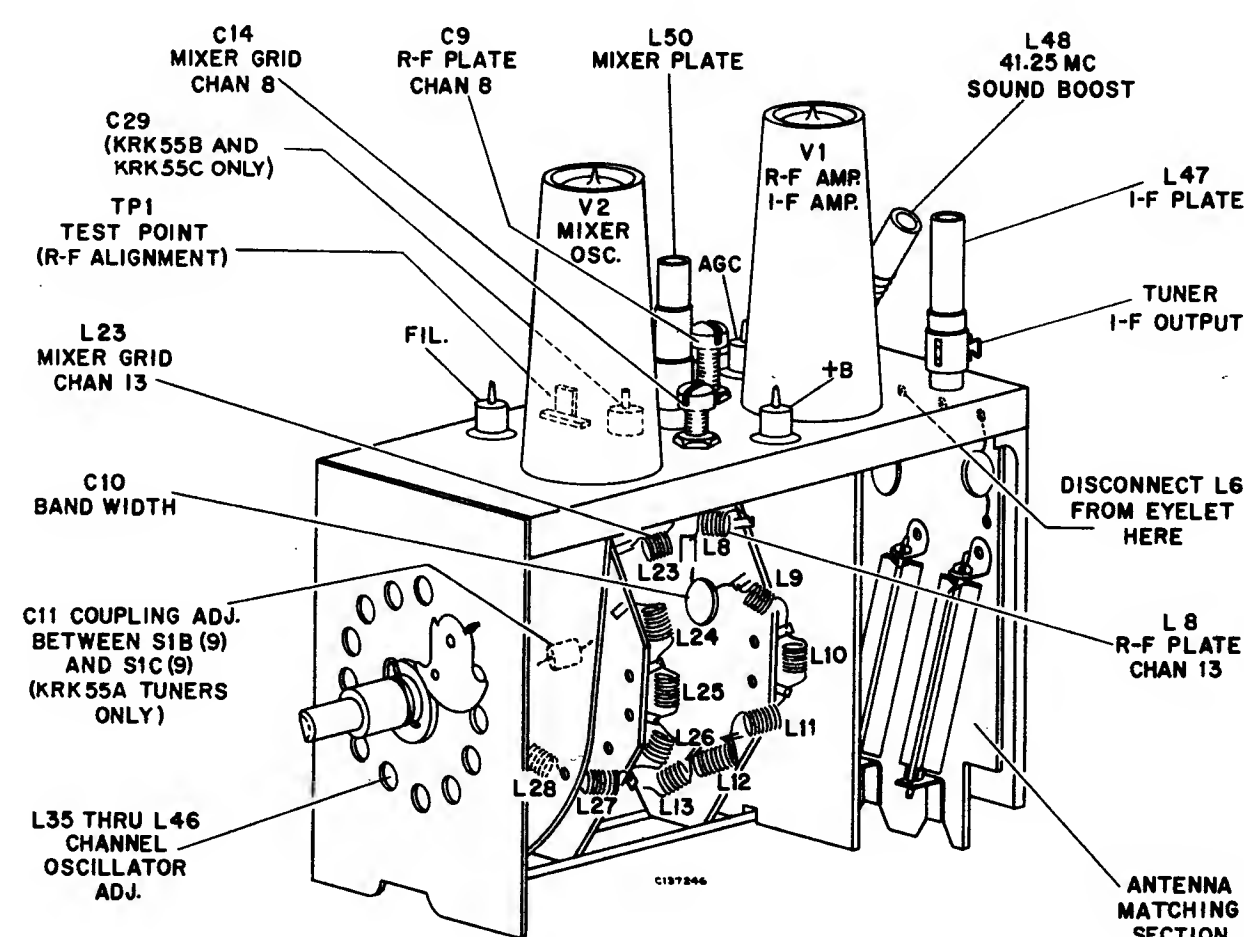


Figure 11—Tuner Adjustments

affects the response band width. Adjustment of C10 is accomplished by moving its position in the R-F plate-mixer grid compartment. **Note.**—In some instances, on KRK55A tuners only, repositioning of C11 coupling adjustment may be required to achieve bandwidth limits on the higher channels.

Alignment in all cases shall favor maximum gain at mid-point of the response curve. Figure 12 shows typical response curves for all channels, however, the following limits and specifications must be observed.

1. The valley between the peaks should fall no lower than 30% of maximum response on any channel. (Adjustment should be made to favor maximum gain between peaks.)
2. The tilt between carriers on all channels, except channels 2, 3 and 4, shall not exceed 30% using the maximum amplitude carrier as a 100% reference. On channels 2, 3 and 4 the tilt shall not exceed 40% between carriers.
The picture carrier shall fall no lower than 85% of its adjacent peak and the sound carrier no less than 75% of its adjacent peak. However, where either carrier falls outside the peak it should be no lower than 90% of maximum response on the adjacent peak.
3. Maximum bandwidth on all channels, except channels 9 and 10, shall not exceed 6.75 mc. between the shoulders of the two peaks. On channels 9 and 10 the bandwidth shall not exceed 7.9 mc. between shoulders. Minimum bandwidth conditions are indicated in 2. above by the specifications indicated when one carrier falls outside the curve.

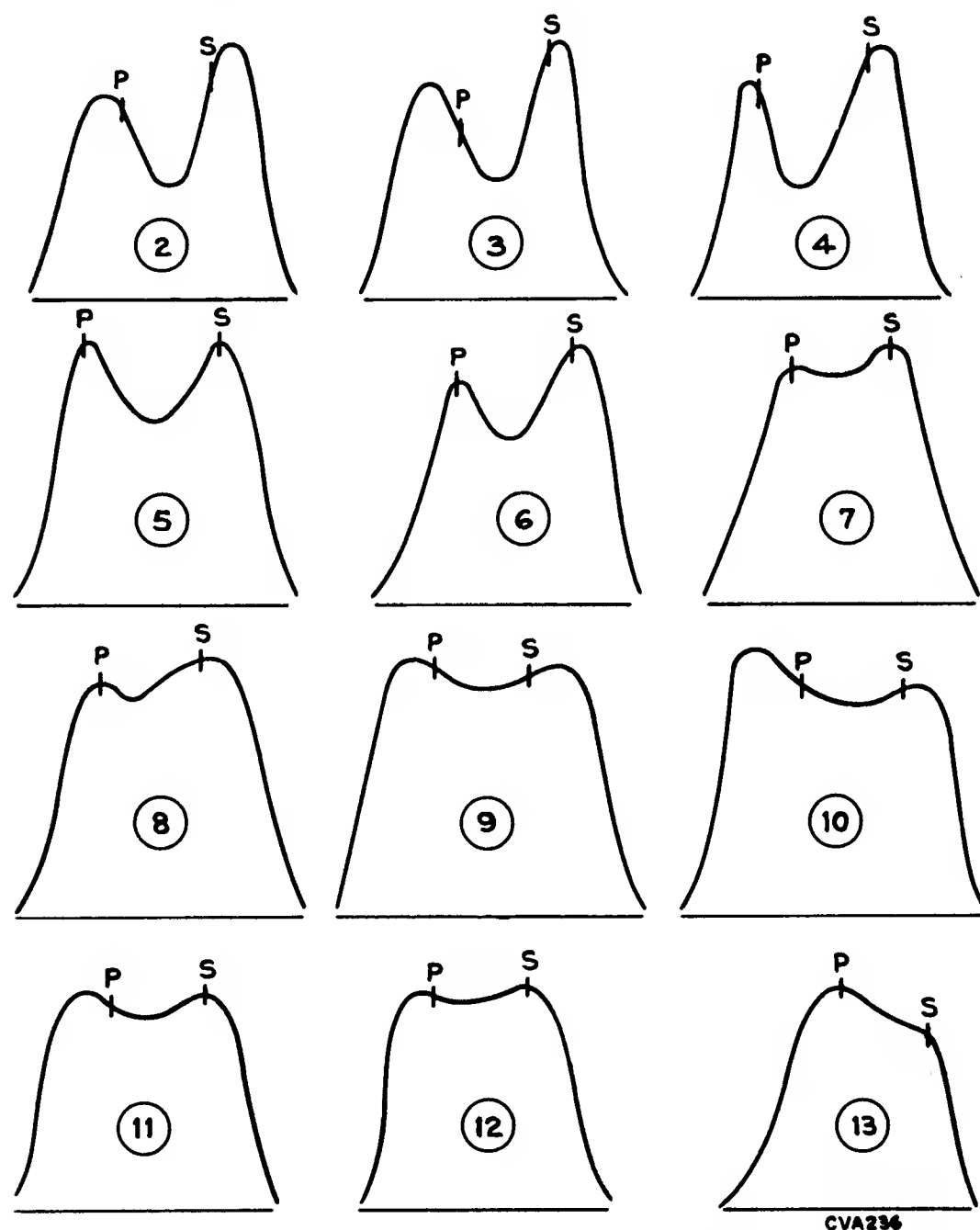


Figure 12—Typical Tuner R-F Responses

Set the receiver channel selector switch and the sweep generator to channel 13.

From the signal generator, insert channel 13 sound and picture carrier markers, 211.25 mc. and 215.75 mc.

Adjust L8 and L23 for proper response. Refer to Figure 12. These coils must be knifed to adjust. See Figure 11.

Turn off the sweep and signal generators.

Connect the "VoltOhmyst" to the tuner test point TP1.

Check the oscillator injection voltage to be within limits as previously specified. Where the voltage is not within the previously specified limits, the 6U8 oscillator-mixer tube should be replaced. If the voltage is still outside limits, replace C16. (Note: It is assumed the +B voltage to the tuner is between 190 volts and 240 volts with no signal input.)

If it was necessary to replace the 6U8 or C16, turn the sweep and signal generators back on and repeat the oscillator tracking procedure for channels 8 through 13.

Set the receiver channel selector switch to channel 13 and readjust L46 for proper oscillator frequency, 257 mc.

Set the sweep and signal generators to channel 8.

Readjust C9, C10 and C14 for correct curve shape, frequency and bandwidth.

Turn off the sweep and signal generators. Switch back to channel 13 and check the oscillator injection voltage at TP1.

Turn off the sweep generator and switch the receiver to channel 6.

Adjust the signal generator to the channel 6 oscillator frequency 129 mc.

Leave the fine tuning control set at the 84° point.

Adjust L39 for an audible beat. Adjust L13 and L28, by knifing the coils, for proper curve shape referring to Figures 11 and 12. Recheck the oscillator injection voltage at TP1, to insure that it is within the limits specified.

The adjustment of L13 and L28 should favor maximum amplitude of the curve midway between the markers. L13 tunes the R-F amplifier plate circuit and affects the frequency of the pass band most noticeably, L28 tunes the mixer grid circuit and affects the tilt of the curve most noticeably.

Check the response of channels 2 through 6 by switching the receiver channel switch, sweep generator and marker generator to each of these channels and observing the response and oscillator injection voltage obtained. Refer to Figure 12 for typical response curves. It should be found that all these channels have the proper response within the limits and specifications previously indicated.

If the markers fail to fall within these requirements, adjust the R-F plate coils L13 through L9 and the mixer grid coils L28 through L24 for their respective channels. These coils must be knifed and adjustment should be made starting on channel 6 and proceeding downward to channel 2.

Switch the channel selector, signal generator and marker generator through channels 7 to 13 and observe the response curves, referring to Figure 12 for proper wave shape. Check the injection voltage at each channel to be within limits. If necessary readjust C9, C10 and C14 to obtain the proper responses.

With the receiver and signal generator on channel 13 adjust L46 for an audible beat with the signal generator.

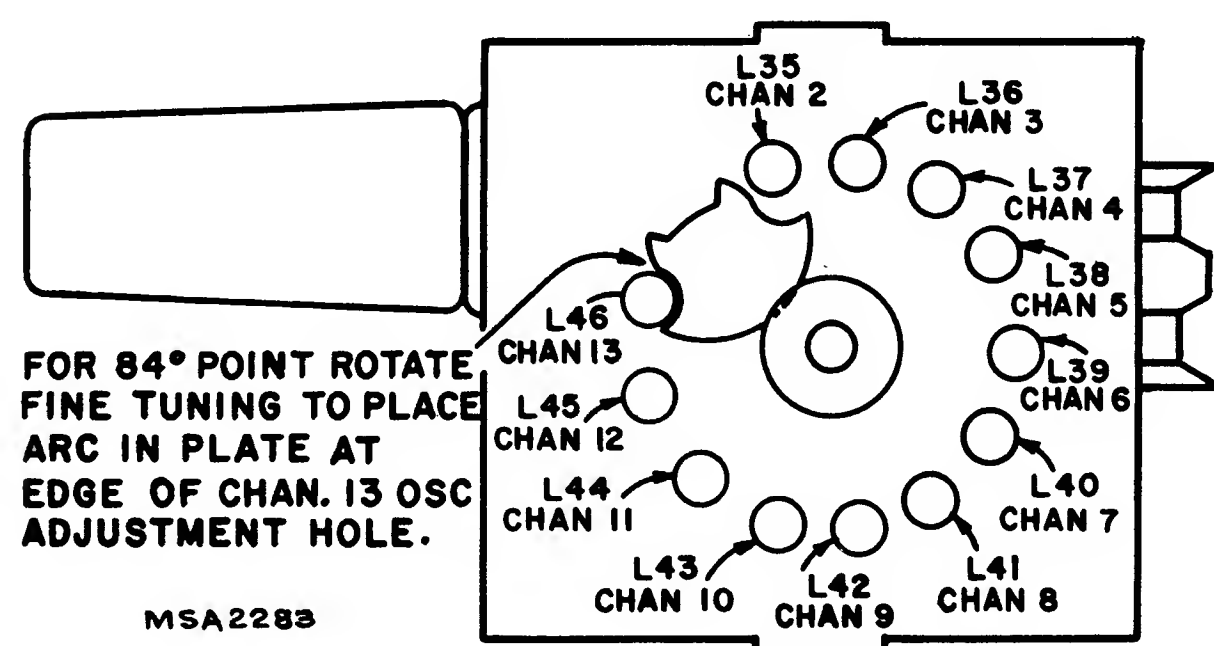


Figure 13—Tuner Oscillator Adjustments

Adjust the oscillator to frequency on all channels by switching the receiver and the frequency standard to each channel and adjusting the appropriate oscillator slug to obtain the audible beat on each channel. Recheck the oscillator injection voltage on each channel to verify that the voltage is within the specified limits. Be sure the setting of the fine tuning at the 84° point has not changed when making the above oscillator adjustments. See Figure 13.

The adjustments for the I-F section of the tuner are given in the overall alignment of the receiver. It may be desired, however, to check functioning of this section of the tuner independently of the main chassis.

Connect the proper voltages to the tuner supply terminals; the limits for +B voltage are specified above, normal value is 215 volts.

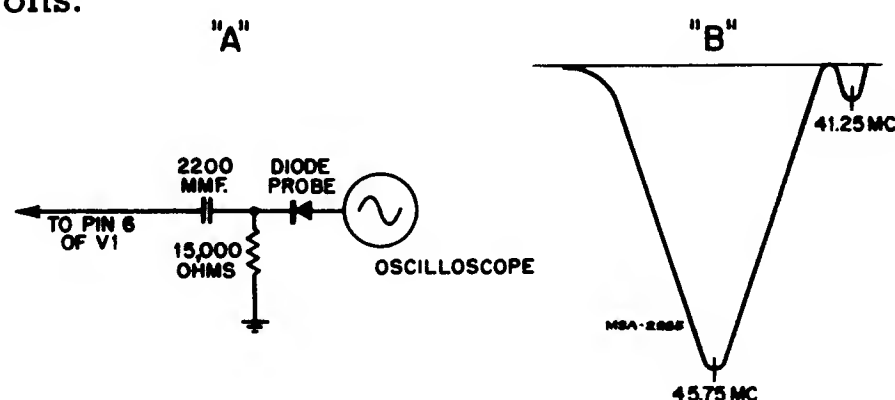


Figure 14—Detector Probe and Tuner I-F Response

Connect a high impedance detector, such as shown in Figure 14A, to the I-F plate of the R-F/I-F amplifier, pin 6 of V1. To do this, connect a 2200 mmf. capacitor to the tuner I-F output, pin 6 of V1, and connect the oscilloscope crystal probe to the other end of the capacitor. Connect a 15,000 ohm composition resistor, from the junction of the probe and the 2200 mmf. capacitor, to ground as shown in Figure 14A.

Connect the sweep generator to the antenna terminals and set the generator to channel 8. Insert a marker from the signal generator at 45.75 mc. by loosely coupling the signal generator to the antenna terminals.

The response observed on the oscilloscope should approximate the curve shown in Figure 14B. Adjust L49 and L50 for maximum gain at 45.75 mc. and L48 for maximum gain at 41.25 mc. When V1 circuits are functioning properly, it should be possible to obtain a minimum signal of .2 volts peak-to-peak on the oscilloscope as the sweep output is increased. The exact adjustments of L47, L48 and L50 should be made under overall alignment, the response in Figure 14B is intended only to indicate functioning of these circuits.

TUNER ANTENNA MATCHING SECTION ALIGNMENT.

—The antenna matching section is accurately aligned at the factory. Adjustment of this section should not be attempted in the customer's home since even slight misalignment may cause serious attenuation of the signal especially on channel 2.

The F-M trap which is mounted in the antenna matching section may be adjusted without adversely affecting the alignment.

To align the antenna matching section disconnect coil L6 from its junction with C5. Leave C5 connected to the eyelet. Solder a short piece of insulated wire about one inch long to the eyelet through the hole in the rear of the tuner case.

Connect the oscilloscope diode probe to C5 using the short length of wire just installed. Connect the diode probe to the oscilloscope, using the oscilloscope preamplifier. Set the oscilloscope for maximum gain.

Connect the signal generator to the antenna input terminals. Modulate the signal generator 30% with an audio signal.

Note.—Inductances in the matching section are not slug tuned and therefore must be knifed for adjustment.

Tune the signal generator to 47.0 mc. and adjust the generator output to give an indication on the oscilloscope. Knife L4 in the matching section for minimum audio indication on the oscilloscope. The bottom shield of the tuner may be removed without removing the tuner from the chassis.

Tune the signal generator to 41.25 mc. and knife L1 for minimum indication on the oscilloscope.

Remove the oscilloscope and diode probe from the tuner and connect a 300 ohm $\frac{1}{2}$ watt composition resistor in parallel with an 8 mmf. ceramic capacitor between C5 and ground

on the tuner case. Keep the leads as short as possible. Reconnect the oscilloscope diode probe to C5.

Connect the VHF sweep generator to the antenna input terminals. In order to prevent coupling reactance from the sweep generator into the matching section, it is advisable to employ a resistance pad at the antenna terminals. Figure 0 shows three different resistance pads for use with sweep generators with 50 ohm co-ax output, 72 ohm co-ax output or 300 ohm balanced output. Choose the pad to match the output impedance of the particular sweep employed.

Connect the signal generator loosely to the antenna terminals.

Set the sweep generator to sweep from 45 mc. to 54 mc. With RCA Type WR59A sweep generators, this may be accomplished by returning channel number 1 to cover this range. With WR59B sweep generators this may be accomplished by returning channel number 2 to cover the range. In making these adjustments on the generator, be sure not to turn the core too far clockwise so that it becomes lost beyond the core retaining spring.

Knife L2 and L3 to obtain the response shown in Figure 15. The adjustments in the matching unit interact to some extent. Repeat the above procedure until no further adjustments are necessary. (**Note.**—Second harmonic output from the sweep generator may cause distortion of the response. Tune L5 F-M trap for maximum inductance to eliminate distortion when adjusting the matching unit. Be sure to return the L5 slug to its original position after adjusting the matching unit to prevent attenuation on channel 5 or 6.)

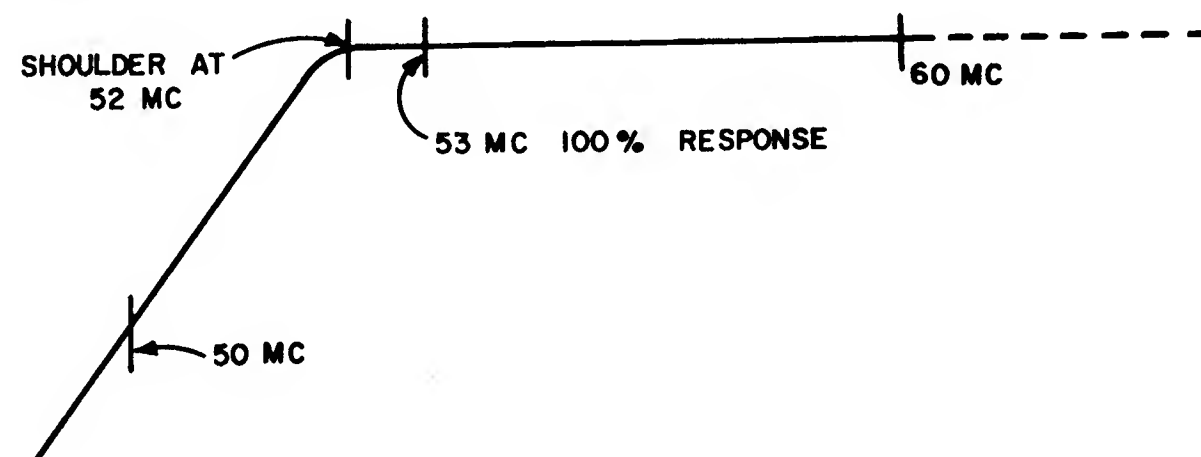


Figure 15—Tuner Antenna Matching Section Response

SWEEP ALIGNMENT OF PICTURE I-F.—The tuner should be in proper R-F alignment before performing alignment of the I-F section of the receiver.

Connect the sweep generator to the antenna terminals of the receiver using the shortest leads possible. Couple the signal generator loosely to the antenna terminals and set the generator to 45.5 mc.

Set the fine tuning control to the 84° point as indicated in Figure 13.

Set the receiver channel selector switch to the channel 4 position.

Ground the AGC terminal of the tuner to the tuner case with a short jumper.

Connect the oscilloscope to the junction of R120, R121 and C121 at terminal "C" of the 2nd. Detector Transformer T104.

Adjust L50, L47 and T104 for maximum gain at 45.5 mc. The response should conform to the curve shown in Figure 16A.

Insert a marker at 41.25 mc. and adjust L48 Sound Boost adjustment for maximum gain at 41.25 mc. with the response shown in Figure 16A.

Set the sweep output to produce 1 volt peak-to-peak on the oscilloscope when making the final touches of the above adjustments.

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Observe the deflection of the curve on the oscilloscope and detune L47, going higher in frequency (clockwise), to reduce the amplitude of the response by 5%.

Detune T104, going lower in frequency (counter-clockwise from top or clockwise if adjusted from bottom), to decrease the amplitude of the response by an additional 15% from its original maximum position.

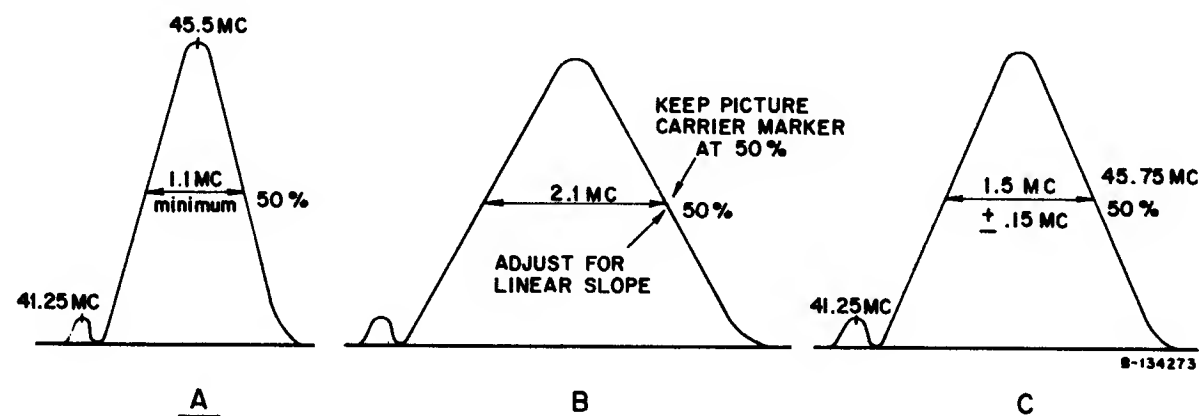


Figure 16—Overall Responses

Insert a marker from the signal generator at the channel 4 R-F picture carrier frequency 67.25 mc. and check the response bandwidth. With the fine tuning adjusted to place the picture carrier marker at 50% on the overall response, the bandwidth at 50% amplitude on the curve should be no less than 1.1 mc.

Remove the jumper grounding the AGC terminal and connect a bias supply to the AGC terminal. Adjust the bias supply for -3 volts at the AGC terminal as measured on the "VoltOhmyst."

Check the response on the oscilloscope and readjust L50 slightly to obtain the response shown in Figure 16B. The curve should be symmetrical and should show a linear response on the picture carrier slope. Adjust the fine tuning to keep the 67.25 mc. picture carrier marker at 50% on the curve when readjusting L50. The bandwidth at 50% of response should be 2.1 mc. with the fine tuning adjusted to place the marker at 50%. If necessary readjust T104 to obtain proper bandwidth of 2.1 mc. making sure the 67.25 mc. marker is at the 50% point as the final adjustment is made.

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Observe the deflection of the curve on the oscilloscope and detune L47, going higher in frequency (clockwise), to reduce the amplitude of the response by 10%.

Detune L50, going lower in frequency (counter-clockwise from top or clockwise if adjusted from bottom), to decrease the amplitude of the response by an additional 10% from its original maximum position.

Insert a marker from the signal generator at the channel 4 R-F picture carrier frequency 67.25 mc. and check the response bandwidth. With the fine tuning adjusted to place the picture carrier marker at 50% on the overall response, the bandwidth at 50% amplitude on the curve should be 1.5 mc. \pm .15 mc. as shown in Figure 16C.

Adjust T104 for a symmetrical response while maintaining the picture carrier at 50% and the bandwidth requirements as stated above. Refer to Figure 16C.

RATIO DETECTOR AND SOUND I-F ALIGNMENT.—Set the signal generator at 4.5 mc. and connect it to the first video amplifier grid, pin 7 of V103 in series with a .01 mfd. capacitor.

Connect the "VoltOhmyst" to the junction of R142 and R108.

Tune the ratio detector secondary T102 bottom core for maximum d-c on the "VoltOhmyst." (Core is accessible from the top of T102 by going through the top slug with the proper hex-head tool, or may be made from the bottom of T102.)

Tune the ratio detector primary, T102 top core for maximum d-c output on the "VoltOhmyst." Adjust the signal level from the signal generator for 2 volts on the "VoltOhmyst" when finally peaked, when making the above adjustments.

Tune the T101 (top) core for maximum d-c on the "VoltOhmyst."

The output from the signal generator should be set to produce approximately 2 volts on the "VoltOhmyst" when the final touches on the T101 adjustment are made.

Connect the "VoltOhmyst" to the junction of R107, R108 and C110.

Tune T102 bottom for zero d-c at the junction of R107, R108 and C110.

HORIZONTAL OSCILLATOR AND OUTPUT ALIGNMENT.

—Normally the alignment of the horizontal oscillator is not considered to be a part of the alignment procedure, but since the oscillator waveform adjustment may require the use of an oscilloscope, it can not always be done conveniently in the field. The waveform adjustment is made at the factory and normally should not require readjustment in the field. However, the waveform adjustment should be checked whenever the receiver is aligned.

The proper setting of the width and drive adjustments, as outlined on page 6, should be made before making adjustment of the sine wave coil L155.

Place a jumper across the terminals of the sine wave coil L155 and adjust the horizontal control until the picture pulls into sync. Remove the short across the sine wave coil.

Connect the low capacity probe of an oscilloscope to the junction of L101, L155 and C167. Turn the horizontal hold control counter-clockwise until the picture falls out of sync, then counter-clockwise until the picture just pulls into sync. The pattern on the oscilloscope should be as shown in Figure 22C. Adjust the sine wave adjustment core until the two peaks are at the same height. During this adjustment, the picture must be kept in sync by readjusting the horizontal hold control if necessary.

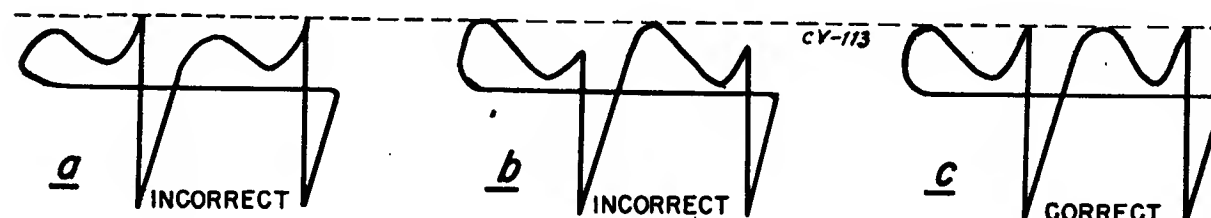


Figure 17—Horizontal Oscillator Waveforms

Remove the oscilloscope upon completion of this adjustment.

Horizontal Drive Adjustment.—Turn the horizontal hold control until the picture falls out of sync with the diagonal lines sloping down to the left. Slowly turn the horizontal control counter-clockwise and note the number of diagonal bars obtained just before the picture pulls into sync.

Pull-in should occur with one and one-half to three bars present.

Set the width coil L157 to overscan approximately $\frac{1}{4}$ " at each side.

Set the brightness control fully clockwise.

With the horizontal control set at the pull-in point, adjust the horizontal drive trimmer C170 counter-clockwise for a bright vertical line in the center of the picture. Turn the trimmer clockwise until the line just disappears. If no line appears set the drive trimmer fully counter-clockwise.

Set the brightness control to normal and adjust the width control so the picture overscans the mask $\frac{1}{4}$ " at each side with normal line voltage (117V. AC). Readjust the horizontal drive trimmer as above.

VOLTAGE CHART

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The following measurements represent two sets of conditions. In the first condition, a 30000 microvolt test pattern signal was fed into the receiver and the picture synced. The second condition was obtained by removing the antenna leads and short circuiting the receiver antenna terminals. Voltages shown are read with a type WV97A Senior "VoltOhmyst" between the indicated terminal and chassis ground and with the receiver operating on 117 volts, 60 cycles, a-c.

Tube No.	Tube Type	Function	Operating Condition	E. Plate		E. Screen		E. Cathode		E. Grid		Notes on Measurements
				Pin No.	Volts	Pin No.	Volts	Pin No.	Volts	Pin No.	Volts	
V1A	6U8	R-F Amplifier	30000 Mu. V.	1	110	—	—	8	0	9	3	
			No Signal	1	90	—	—	8	0	9	0	
V1B	6U8	1st Pix. I-F Amplifier	30000 Mu. V.	6	202	3	200	7	115	2	112	
			No Signal	6	215	3	210	7	102	2	91	
V2	6U8	Mixer	30000 Mu. V. Signal	6	84	3	82.5	7	0	2	2	
			No Signal	6	85	3	84.5	7	0	2	2	
		R-F Oscillator	30000 Mu. V. Signal	1	181	—	—	8	82.5	9	78	
			No Signal	1	190	—	—	8	84.5	9	80	
V101A	6U8	Sound I-F Amp. & Audio Amp.	30000 Mu. V.	6	80	3	118	7	1.2	2	—2.5	
			No Signal	6	76	3	110	7	2.6	2	0	
V101B	6U8	Audio Output	30000 Mu. V.	1	213	—	—	8	4.25	9	0	
			No Signal	1	209	—	—	8	4.1	9	0	
V102A	6U8	2nd Pix. I-F Amplifier	30000 Mu. V.	6	220	3	176	7	.42	2	—3.2	Normal contrast
			No Signal	6	216	3	120	7	.92	2	—3.8	Maximum contrast
V102B	6U8	Sync Output	30000 Mu. V.	1	42	—	—	8	0	9	—1.3	
			No Signal	1	40	—	—	8	0	9	0	
V103A	6AW8	Video Amplifier	30000 Mu. V. Signal	9	191	8	147	6	9.5	7	4.9	Normal contrast
			No Signal	9	141	8	58	6	0	7	—6	Maximum contrast
V103B	6AW8	1st Sync	30000 Mu. V. Signal	3	61	—	—	1	0	2	—9.3	
			No Signal	3	32.5	—	—	1	0	2	—8.7	
V104	8DP4	Kinescope	30000 Mu. V. Signal	Cap	—	10	176	11	16.5	2	0	Pin 3 Focus Anode 0-500V. depending on focus control setting *Maximum contrast
			No Signal	Cap	—	10	120*	11	12.5	2	0	
V151A	6CM7 *(6CG7 in KCS100B)	Vertical Oscillator	30000 Mu. V. Signal	6	69	—	—	3 *(8)	0	7	—30.5	Depends on setting of Vert hold control Voltages shown are synced pix adjustment
			No Signal	6	68	—	—	3 *(8)	0	7	—29.5	
V151B	6CM7 *(6CG7 in KCS100B)	Vertical Output	30000 Mu. V. Signal	1	400 *448	—	—	9 *(3)	0	8 *(2)	—24.5 *—19.5	*KCS100B Chassis only
			No Signal	1	394 *440	—	—	9 *(3)	0	8 *(2)	—24 *—19	

VOLTAGE CHART AND ALIGNMENT DATA

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Tube No.	Tube Type	Function	Operating Condition	E. Plate		E. Screen		E. Cathode		E. Grid		Notes on Measurements
				Pin No.	Volts	Pin No.	Volts	Pin No.	Volts	Pin No.	Volts	
V152	6CG7	Horizontal Osc. Control	30000 Mu. V. Signal	1	220	—	—	3	13.3	2	—13	
			No Signal	1	216	—	—	3	4.5	2	—18.7	
		Horizontal Oscillator	30000 Mu. V. Signal	6	171	—	—	8	0	7	—72	
			No Signal	6	168	—	—	8	0	7	—76	
V153	6BQ6GTB	Horizontal Output	30000 Mu. V. Signal	Cap	†	4	129	8	0	5	—36.5	†High Voltage Pulse Present
			No Signal	Cap	†	4	126	8	0	5	—36	†High Voltage Pulse Present
V154	1V2	H.V. Rectifier	30000 Mu. V. Signal	1	†	—	—	4 & 5	*7,045 ‡*5,850	—	—	†High Voltage Pulse Present *Measured with H.V. Probe ‡KCS100B only
			No Signal	1	†	—	—	4 & 5	*7,000 ‡*5,800	—	—	
V155	6AX4GT	Damper	30000 Mu. V. Signal	5	220	—	—	3	†	—	—	†High Voltage Pulse Present
			No Signal	5	216	—	—	3	†	—	—	†High Voltage Pulse Present

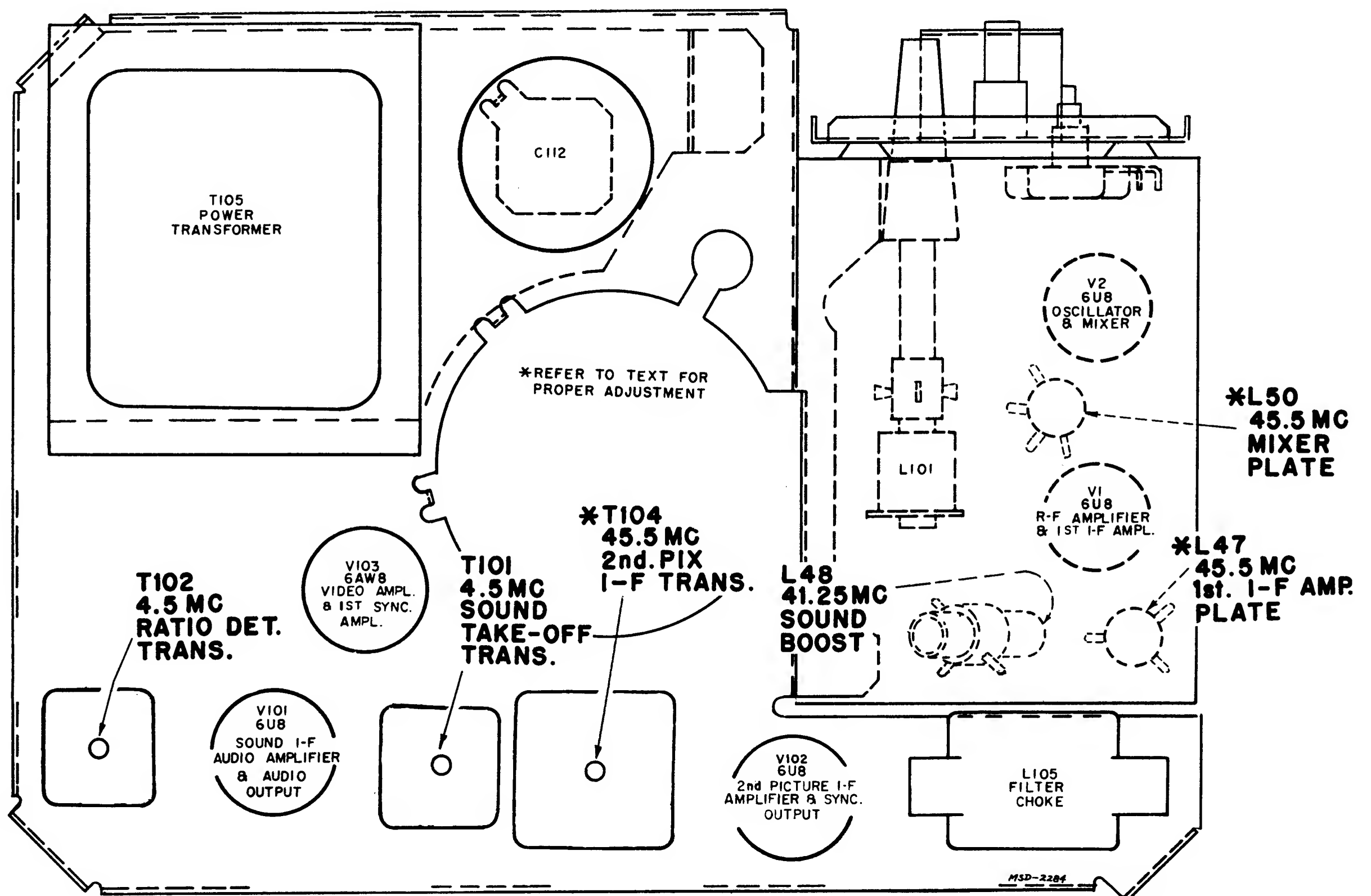


Figure 18—Alignment Adjustments (All on rear chassis)

ALIGNMENT TABLE

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THE DETAILED ALIGNMENT PROCEDURE BEGINNING ON PAGE 12 SHOULD BE READ BEFORE ALIGNMENT BY USE OF THE TABLE IS ATTEMPTED

Step No.	CONNECT VHF SIGNAL GENERATOR TO	SIGNAL GEN. FREQ. MC.	CONNECT VHF SWEEP GENERATOR TO	SWEEP GEN. FREQ. MC.	CONNECT HETERODYNE FREQ. METER TO	HET. METER FREQ. MC.	CONNECT OSCILLOSCOPE TO	MISCELLANEOUS CONNECTIONS AND INSTRUCTIONS	ADJUST	REFER TO
ANTENNA MATCHING UNIT ALIGNMENT										
1	Do not adjust this unit unless fairly certain that it requires adjustment. Disconnect coil L6 from C5, connect 1" wire to C5 at eyelet.									
2	Antenna terminals	47.0 mc. 30% mod.	Not used	—	Not used	—	Scope xtal probe from C5 to ground	Use scope amplifier	Knife L4 for min. audio on scope	Fig. 48
3	"	41.25 mc. 30% mod.	"	—	"	—	"	—	Knife L1 for min. audio on scope	Fig. 48
4	Antenna terminals loosely	—	Antenna terminals through pad	45 to 54 mc.	"	—	"	Parallel 300 ohms and 8 mmf. from C5 to gnd.	Knife L2 to obtain response of Fig. 15	Fig. 15
5	Remove crystal probe, pad, 300 ohm resistor and 8 mmf. capacitor. Restore connection between L6 and C5. Remove wire.									
TUNER ALIGNMENT										
6	Connect 180 ohm resistor between screen and plate of V2. (Refer to text for proper connection.) Connect second 180 ohm resistor from plate V1 to junction L47 and L48. Ground AGC terminal. Set fine tuning to 84° point, see figure 13. Do not change fine tuning from 84° point during alignment.									
7	Not used	—	Not used	—	Loosely coupled to r-f oscillator	257 mc.	TP1. Gain to maximum	Rec. on channel 13	L46 for beat on het. freq. meter	Fig. 11 Fig. 13
8	"	—	"	—	"	251 mc.	"	Rec. on channel 12	L45 as above	Fig. 13
9	"	—	"	—	"	245 mc.	"	Rec. on channel 11	L44 as above	Fig. 13
10	"	—	"	—	"	239 mc.	"	Rec. on channel 10	L43 as above	Fig. 13
11	"	—	"	—	"	233 mc.	"	Rec. on channel 9	L42 as above	Fig. 13
12	"	—	"	—	"	227 mc.	"	Rec. on channel 8	L41 as above	Fig. 13
13	"	—	"	—	"	221 mc.	"	Rec. on channel 7	L40 as above	Fig. 13
14	Antenna terminals loosely	181.25 and 185.75	Antenna terminals through pad	Channel 8	Not used	—	TP1. Gain to maximum	Tuner unit on channel 8.	C9, C10, C14 for response shown in Fig. 12	Fig. 11 Fig. 12
15	Antenna terminals loosely	211.25 215.75	Antenna terminals through pad	Channel 13	Not used	—	TP1. Gain to maximum	Rec. on channel 13 "VoltOhmyst" on TP1	L8 and L23 for proper response and osc. injection within limits	Fig. 11 Fig. 12
16	If oscillator injection voltage is not within limits replace V2 (6U8) or C16. Refer to page 12 for proper injection limits. Repeat steps 6-15.									
17	Not used	—	Not used	—	Loosely to tuner unit oscillator	257 mc.	Not used	Rec. on channel 13. Fine tuning fully clockwise	Readjust L46 for beat on het. freq. meter.	Fig. 13
18	Antenna terminals loosely	181.25 and 185.75	Antenna terminals through pad	Channel 8	Not used	—	TP1. Gain to maximum	Tuner unit on channel 8.	Check response. Readjust C9, C10 and C13 if necessary	Fig. 11
19	Not used	—	Not used	—	Not used	—	TP1. Gain to maximum	Rec. on channel 13 "VoltOhmyst" on TP1	Check for osc. injection within limits	Fig. 11
20	Not used	—	Not used	—	Loosely to tuner unit oscillator	129 mh.	Not used	Tuner unit on channel 6.	L39 for beat on het. freq. meter	Fig. 13
21	Antenna terminals loosely	83.25 and 87.75	Antenna terminals through pad	Channel 6	Not used	—	TP1. Gain to maximum		L13 and L28 for response shown in Fig. 13	Fig. 11 Fig. 12
22	"	83.25 87.75	"	Channel 6	"	—	"	Rec. on channel 6 "VoltOhmyst" on TP1	Check to see that response is correct and osc. injection is within limits	Fig. 11 Fig. 12
23	"	77.25 81.75	"	Channel 5	"	—	"	Rec. on channel 5	"	Fig. 12
24	"	67.25 71.75	"	Channel 4	"	—	"	Rec. on channel 4	"	Fig. 12
25	"	61.25 65.75	"	Channel 3	"	—	"	Rec. on channel 3	"	Fig. 12
26	"	55.25 59.75	"	Channel 2	"	—	"	Rec. on channel 2	"	Fig. 12
27	If the response of any channel (steps 22 through 26) is incorrect, knife coils L13 through L9 and L28 through L24 as necessary to obtain proper response, starting at channel 6 going down to 2.									
28	Antenna terminals loosely	211.25 215.75	Antenna terminals through pad	Channel 13	Not used	—	TP1. Gain to maximum	Rec. on channel 13 "VoltOhmyst" on TP1	Check to see that response is correct and osc. injection within limits	Fig. 11 Fig. 12

ALIGNMENT TABLE

Step No.	CONNECT VHF SIGNAL GENERATOR TO	SIGNAL GEN. FREQ. MC.	CONNECT VHF SWEEP GENERATOR TO	SWEEP GEN. FREQ. MC.	CONNECT HETERODYNE FREQ. METER TO	HET. METER FREQ. MC.	CONNECT OSCILLOSCOPE TO	MISCELLANEOUS CONNECTIONS AND INSTRUCTIONS	ADJUST	REFER TO
29	Antenna terminals loosely	205.25 209.75	Antenna terminals through pad	Channel 12	Not used	—	TP1. Gain to maximum	Rec. on channel 12	Check to see that response is correct and osc. injection within limits	Fig. 12
30	"	199.25 203.75	"	Channel 11	"	—	"	Rec. on channel 11	"	Fig. 12
31	"	193.25 197.75	"	Channel 10	"	—	"	Rec. on channel 10	"	Fig. 12
32	"	187.25 191.75	"	Channel 9	"	—	"	Rec. on channel 9	"	Fig. 12
33	"	181.25 185.75	"	Channel 8	"	—	"	Rec. on channel 8	"	Fig. 12
34	"	175.25 179.75	"	Channel 7	"	—	"	Rec. on channel 7	"	Fig. 12
35 Check r-f response and oscillator injection on channels 7 through 13, adjusting C9, C10 or C14 if necessary, stopping on channel 13 for the next step.										
36	Not used	—	Not used	—	Loosely coupled to r-f oscillator	257 mc.	TP1. Gain to maximum	Rec. on channel 13	L46 for beat on het. freq. meter	Fig. 13
37	"	—	"	—	"	251 mc.	"	Rec. on channel 12	L45 as above	Fig. 13
38	"	—	"	—	"	245 mc.	"	Rec. on channel 11	L44 as above	Fig. 13
39	"	—	"	—	"	239 mc.	"	Rec. on channel 10	L43 as above	Fig. 13
40	"	—	"	—	"	233 mc.	"	Rec. on channel 9	L42 as above	Fig. 13
41	"	—	"	—	"	227 mc.	"	Rec. on channel 8	L41 as above	Fig. 13
42	"	—	"	—	"	221 mc.	"	Rec. on channel 7	L40 as above	Fig. 13
43	"	—	"	—	"	129 mc.	"	Rec. on channel 6	L39 as above	Fig. 13
44	"	—	"	—	"	123 mc.	"	Rec. on channel 5	L38 as above	Fig. 13
45	"	—	"	—	"	113 mc.	"	Rec. on channel 4	L37 as above	Fig. 13
46	"	—	"	—	"	107 mc.	"	Rec. on channel 3	L36 as above	Fig. 13
47	"	—	"	—	"	101 mc.	"	Rec. on channel 2	L35 as above	Fig. 13
48 Repeat steps 36 through 47 as a check. Upon completion, remove two 180 ohm resistors.										
PICTURE I-F AND SOUND BOOST ADJUSTMENTS										
Step No.	CONNECT VHF SIGNAL GENERATOR TO	SIGNAL GEN. FREQ. MC.	CONNECT VHF SWEEP GENERATOR TO	SWEEP GEN. FREQ. MC.	CONNECT OSCILLOSCOPE TO	CONNECT "VOLTOHMYST" TO	MISCELLANEOUS CONNECTIONS AND INSTRUCTIONS	ADJUST	REFER TO	
1	Antenna terminals loosely	45.5	Antenna terminals	Channel 4	Junction R120, R121 and C121	Not used	Fine tuning at 84° point. AGC terminal grounded	L50, L47 and T104 to obtain response shown in Fig. 16A	Fig. 12 Fig. 16	
2	"	41.25	"	"	"	"	"	L48 for max.	Fig. 16A	
3	"	4.5 mc.	"	"	"	"	Detune L47 higher in freq.	Detune L47 to reduce response by 10% (5% on KCS100B — See text)	Fig. 16 Page 14	
4	"	"	"	"	"	"	Detune T104 lower in freq.	Detune T104 to reduce response by 10% (15% on KCS100D & K—See text)	Fig. 16 Page 14	
5	"	67.25	"	"	"	AGC terminal	Remove ground and adjust AGC bias for —3 volts on meter	Retouch L50 for 2.1 mc. bandwidth Keeping picture carrier at 50% with fine tuning — KCS100B chassis only	Fig. 16B Page 14	
RATIO DETECTOR, SOUND I-F AND 4.5 MC TRAP ALIGNMENT										
6	Pin 7 of V103 in series with .01 mfd. capacitor	4.5 mc.	Not used	—	Not used	Junction R142 and R108	Signal generator adjusted for 2V. on meter	T102 top and bottom for maximum	Fig. 18	
7	"	"	"	—	"	"	Signal generator output adjusted to provide 2V. on meter	T101 top core for max. DC on meter	Fig. 18	
8	"	"	"	—	"	Junction R107, R108 and C110	—	Adjust T102 bottom for zero output on meter	Fig. 18	

CRITICAL LEAD DRESS

8-PT-7010 to 8-PT-7034T Incl.

- (1) Dress C26 in tuner unit away from L50 and mixer test point.
- (2) Dress C101 away from pin 7 of V103 toward V101.
- (3) Keep leads of C113 as short as possible and dress C113 in toward L47.
- (4) Dress C117 toward L50 and tuner base.
- (5) Keep C121 up and next to kinescope shield away from T104 and T101.
- (6) Dress C124 and all leads away from V2 oscillator tube.
- (7) Keep C126 and all leads on wiring side of base away from T105 power transformer.
- (8) Dress C135, from terminal on L50 to ground, as far away from L48 as possible.
- (9) Ground C135 to terminal 3 of R112 Brightness Control only.
- (10) Dress C151 as close to base as possible to allow clearance for V1.
- (11) Keep C173 dressed a minimum of one-quarter inch away from the yoke.
- (12) Make lead of C175 to terminal 2 of T153 as short as possible.
- (13) Dress CR101 straight up and away from T101.
- (14) Keep the leads on CR101, CR102 and CR103 a minimum of one-half inch at the ends.
- (15) Dress the +B lead to L48 on the tuner away from L50 and mixer test point.
- (16) Keep R140 away from all components and insulating boards.
- (17) Keep R162 dressed away from the control bracket.
- (18) The black wire from T105 power transformer should be dressed away from the tube V103.
- (19) Dress all wires to T153 high voltage transformer under the clamp provided.
- (20) The green lead from pin 2 of V102 to terminal 3 of L47 on the tuner, should be as short as possible and should be dressed up away from the chassis and all other components.
- (21) Dress the blue lead, from pin 3 of V103 to terminal 4 of the terminal board, along the outside channel of the base.
- (22) Keep the plate lead of V153 tied back away from V153 and the damper tube.
- (23) Keep all components at least one-quarter inch or more away from the bare lead from pin 3 of V155 to T153.
- (24) Keep all wiring in the picture i-f, sound i-f and video circuits as short and direct as possible.
- (25) All leads should be dressed under the clamps provided.
- (26) Dress all one and two watt resistors away from other components and leads and away from insulating boards.
- (27) Dress kinescope leads through hole provided in base with tape at point of passage through the base.
- (28) Dress all peaking coils up and away from the chassis base.
- (29) Do not change the grounding points of any by-pass capacitors in the picture i-f and sound i-f circuits.
- (30) Keep all interconnecting leads between the two chassis sections dressed away from all i-f coils.
- (31) Route the high voltage anode lead between the kinescope and the plate lead of V153 the 6BQ6GTB output tube.
- (32) Dress all leads as far from the speaker as possible.

The response and waveform presentations shown below and on subsequent pages were photographed from an RCA WO58A Oscilloscope.

The responses shown in Figures 19 and 20 were obtained following the techniques outlined in the Alignment Procedure on pages 13 and 14.

The curves shown are typical, however, some slight variations between receivers can be expected.

The figures in the circles at the lower left of the photographs are keyed to the schematics shown in Figures 47 and 48 and indicate the points at which observation was made.

† Peak-to-peak voltages based on signal voltage at plate of Video Amplifier of 30 volts peak-to-peak measured with low capacity probe.

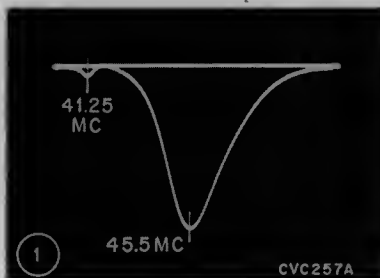
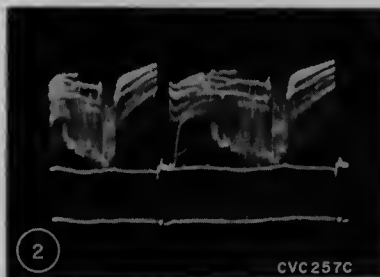
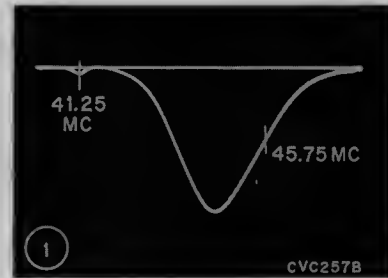


Figure 19—Over-all Pix
I-F Response—Weak Signal



Figure 20—Over-all Pix
I-F Response—Strong Signal



Grid of Video Amplifier
(Pin 7 of V103A) (6AW8)
Voltage depends on picture
Figure 21—Vertical (Oscilloscope
Sync'd to $\frac{1}{2}$ of Vertical Sweep
Rate) (3 Volts PP)



Figure 22—Horizontal (Oscilloscope
Sync'd to $\frac{1}{2}$ of Horizontal Sweep
Rate) (3 Volts PP)

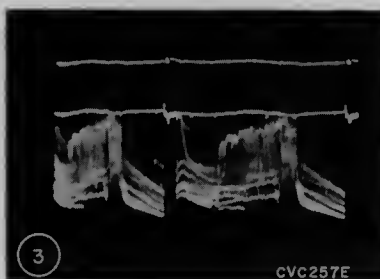
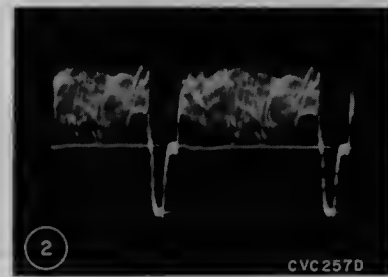
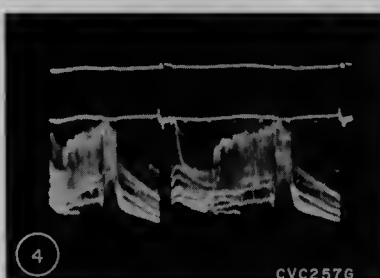
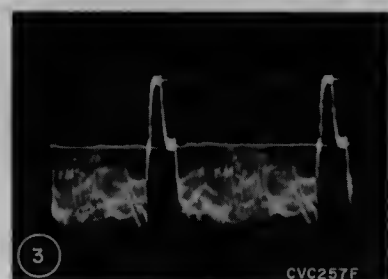


Plate of Video Amplifier
(Pin 9 of V103A) (6AW8)
Voltage depends on picture
Figure 23—Vertical (30 Volts PP)



Figure 24—Horizontal (30 Volts PP)

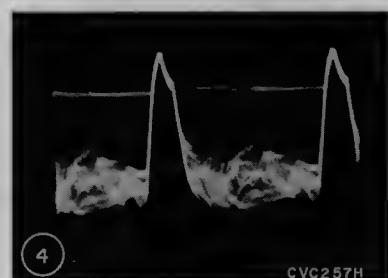


Grid of 1st Sync Amplifier
(Pin 2 of V103B) (6AW8)

Figure 25—Vertical (†14 Volts PP)

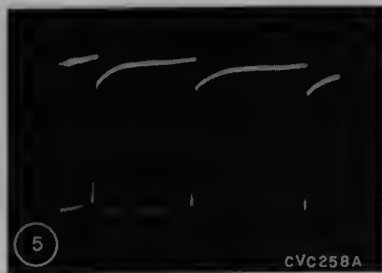


Figure 26—Horizontal (†14 Volts PP)



WAVEFORM PHOTOGRAPHS
Taken from RCA WO58A Oscilloscope

8-PT-7010 to 8-PT-7034T Incl.



*Plate of 1st Sync Amplifier
(Pin 3 of V103B) (6AW8)*

Figure 27—Vertical (± 14 Volts PP)



Figure 28—Horizontal (± 14 Volts PP)

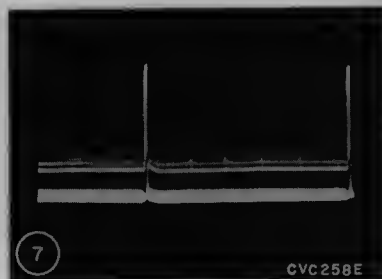


*Grid of Sync Output
(Pin 9 of V102B) (6U8)*

Figure 29—Vertical (± 12.5 Volts PP)



Figure 30—Horizontal (± 12.5 Volts PP)

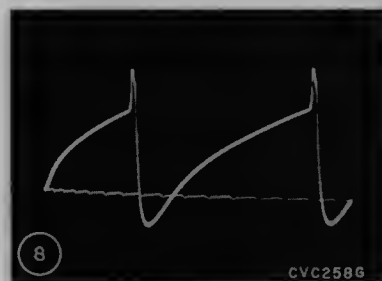


*Plate of Sync Output
(Pin 1 of V102B) (6U8)*

Figure 31—Vertical (40 Volts PP)



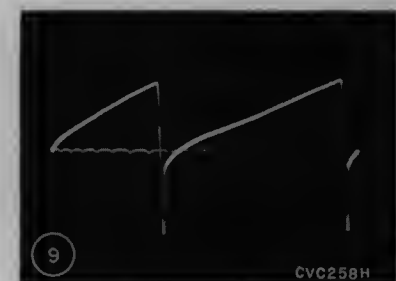
Figure 32—Horizontal (40 Volts PP)



*Figure 33—Grid of Vertical Sweep
Osc. (Pin 7 of V151A) (6CM7 or 6CG7)
(27 Volts PP)*



*Figure 34—Plate of Vertical Sweep
Osc. (Pin 6 of V151A) (6CM7 or 6CG7)
(63 Volts PP)*



*Figure 35—Grid of Vertical Sweep
Output (Pin 8 of V151B 6CM7)
(Pin 2 of V151B 6CG7)
(60 Volts PP)*



*Figure 36—Plate of Vertical Sweep
Output (Pin 1 of V151B) (6CM7 or 6CG7)
(540 Volts PP)*



WAVEFORM PHOTOGRAPHS

Taken from RCA WO58A Oscilloscope

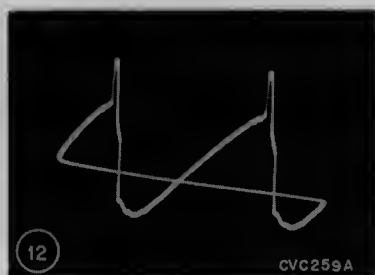


Figure 37—Grid of Horizontal Oscillator Control (Pin 2 of V152)
(6CG7) (21 Volts PP)



Figure 38—Cathode of Horizontal Oscillator Control (Pin 3 of V152)
(6CG7) (1.25 Volts PP)

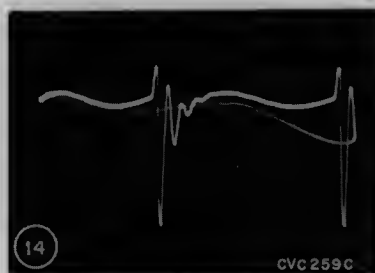


Figure 39—Grid of Horizontal Oscillator (Pin 7 of V152)
(6CG7) (195 Volts PP)



Figure 40—Plate of Horizontal Oscillator (Pin 6 of V152)
(6CG7) (150 Volts PP)



Figure 41—Terminal "F" of L155
(95 Volts PP)



Figure 42—Grid of Horizontal Sweep Output (Pin 5 of V153)
(6BQ6GTB) (80 Volts PP)

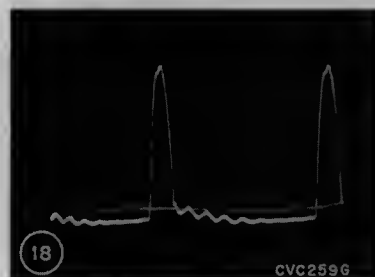


Figure 43—Plate of Horizontal Output (Approx. 5500 Volts PP) (Measured Through a Capacity Voltage Divider Connected from Top Cap of V153 to Ground)



Figure 44—Cathode of Damper (Pin 3 of V155) (6AX4GT)
(Approx. 3500 Volts PP)

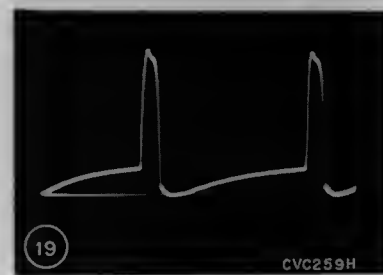
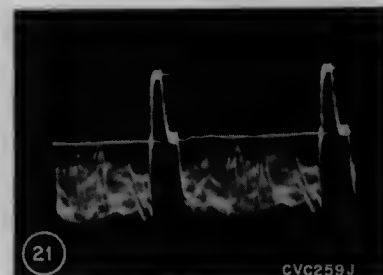


Figure 45—Plate of Damper (Pin 5 of V155) (6AX4GT)
(2 Volts PP)



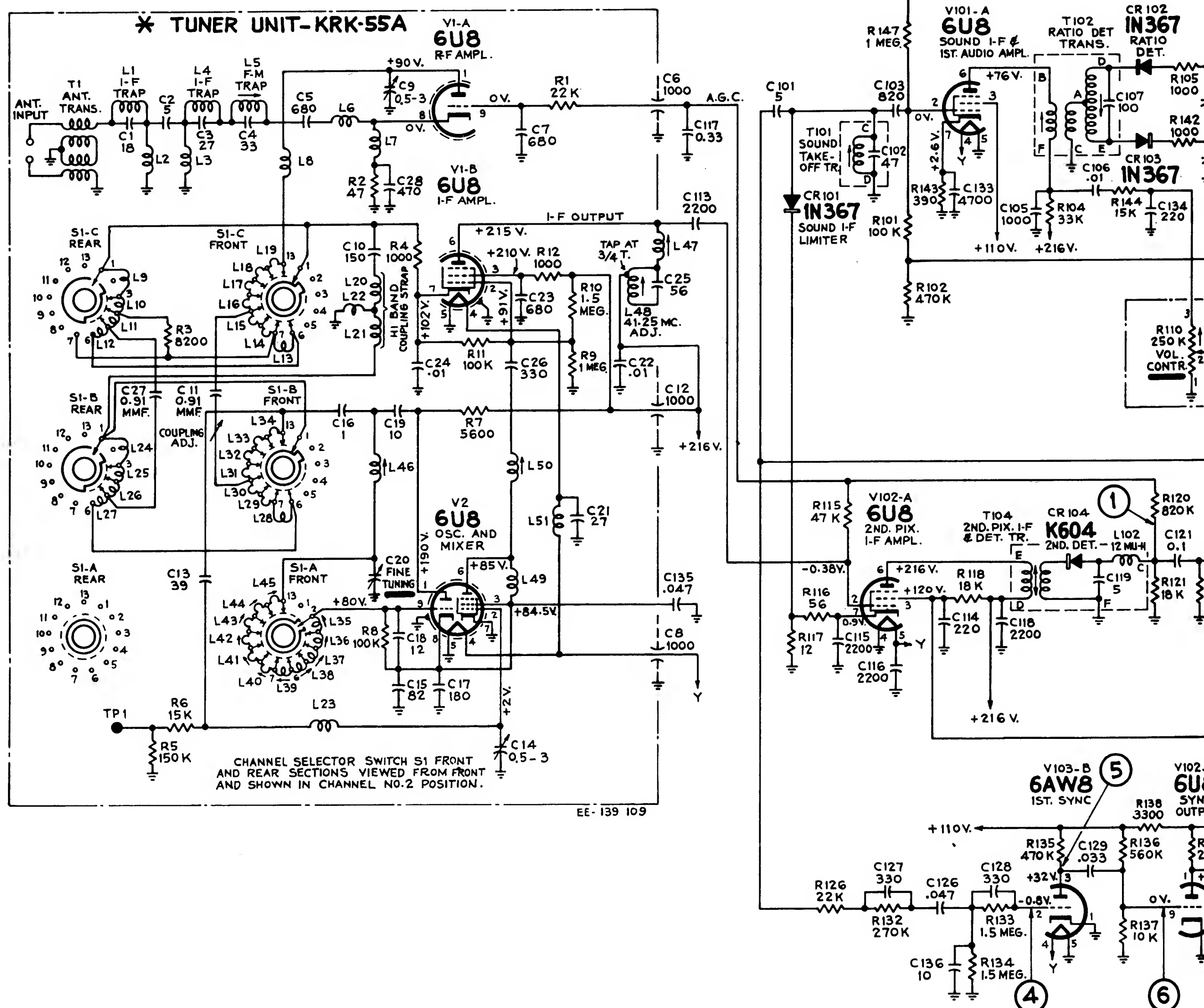
Figure 46—Cathode of Kinescope (Pin 11 of V104)

Voltage depends on picture



CIRCUIT SCHEMATIC D

*(Later production of
KRK55B Tuner shown)



The schematic is shown in the latest condition at the time of printing.
All resistance value in ohms. K = 1000.

PRODUCTION CHANGES IN KCS100B CHASSIS

In some receivers the following differences exist from the latest schematic shown above:

- C160 . . . connected to the junction of the Horizontal Yoke Coils L153 and L154 . . . was 68 mmf.
- C175 . . . at terminal F of L157 Width Coil . . . was .033 mf.
- R154 . . . at pin 6 of VI51A Vertical Oscillator . . . was 1 megohm.
- R157 . . . at the junction of C132 and C155 in kinescope screen circuit . . . was 15,000 ohms.
- R165 . . . connected between L157 Width Coil and the red lead on T152 Vertical Output Transformer . . . was 8200 ohms.

Direction of arrows at controls indicates clockwise rotation.

KINESCOPE AND SAFETY GLASS

front safety glass frame may be cleaned of the kinescope faceplate or plastic window if required.

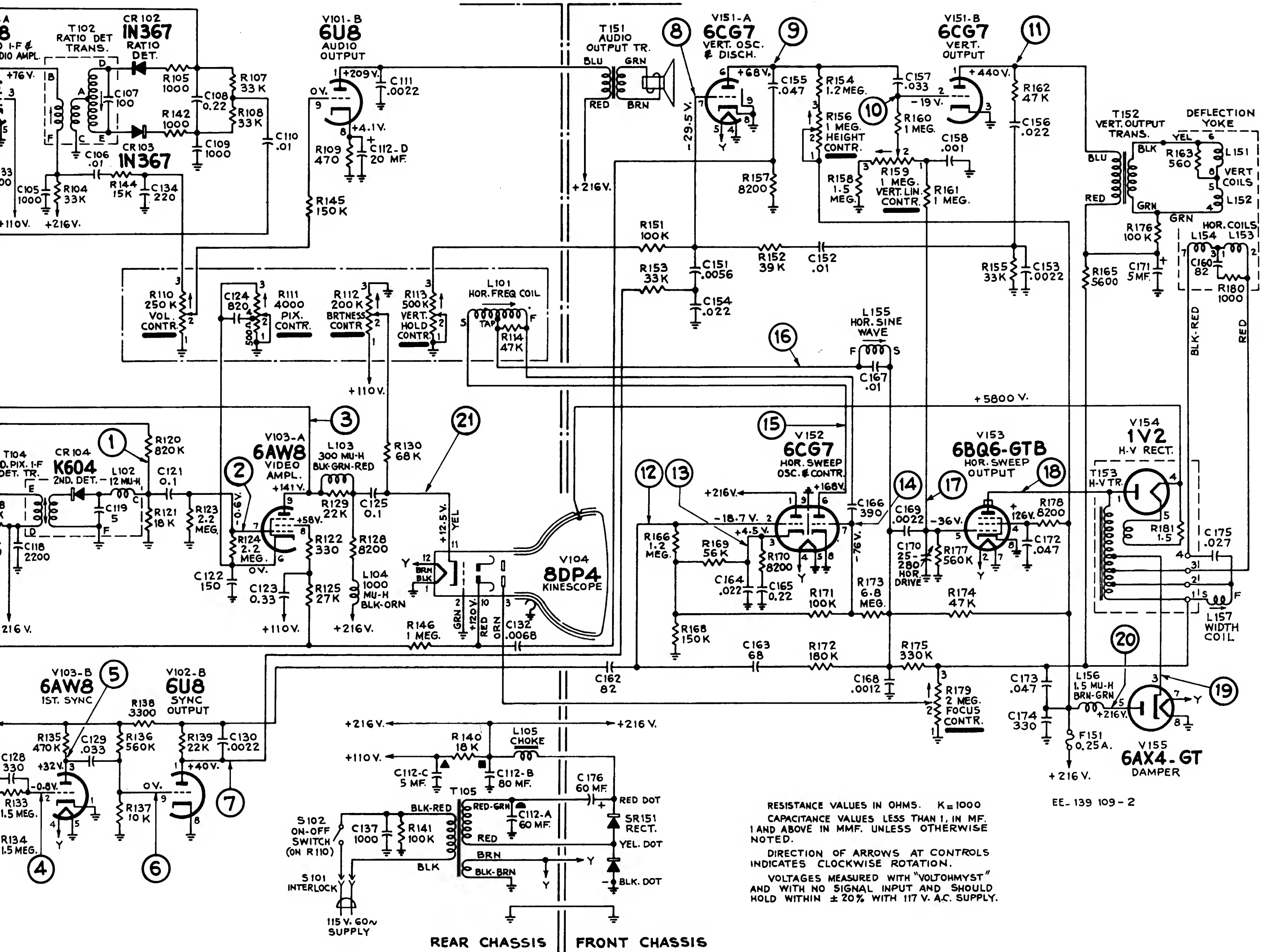
To do this the chassis assembly should be removed from the cabinet (See section on CHASSIS) and the chassis out of the cabinet removed, holding the front mask and safety glass in place with the kinescope mounting strap assembly.

The kinescope faceplate and the plastic window should only be cleaned with clear water. Care should be taken not to scratch the face of the plastic window.

CUT SCHEMATIC DIAGRAM KCS100B CHASSIS

8-PT-7030, 8-PT-7031, 8-PT-7032, 8-PT-7034

*(Later production of KCS100B chassis use a KRK55B Tuner shown in schematic at the right)



controls indi-

All capacitance values less than 1 in MF and above 1 in MMF unless otherwise noted.

All voltages measured with "Volt-Ohmyst" and with no signal input. Voltages should hold within $\pm 20\%$ with 117 v. a-c supply.

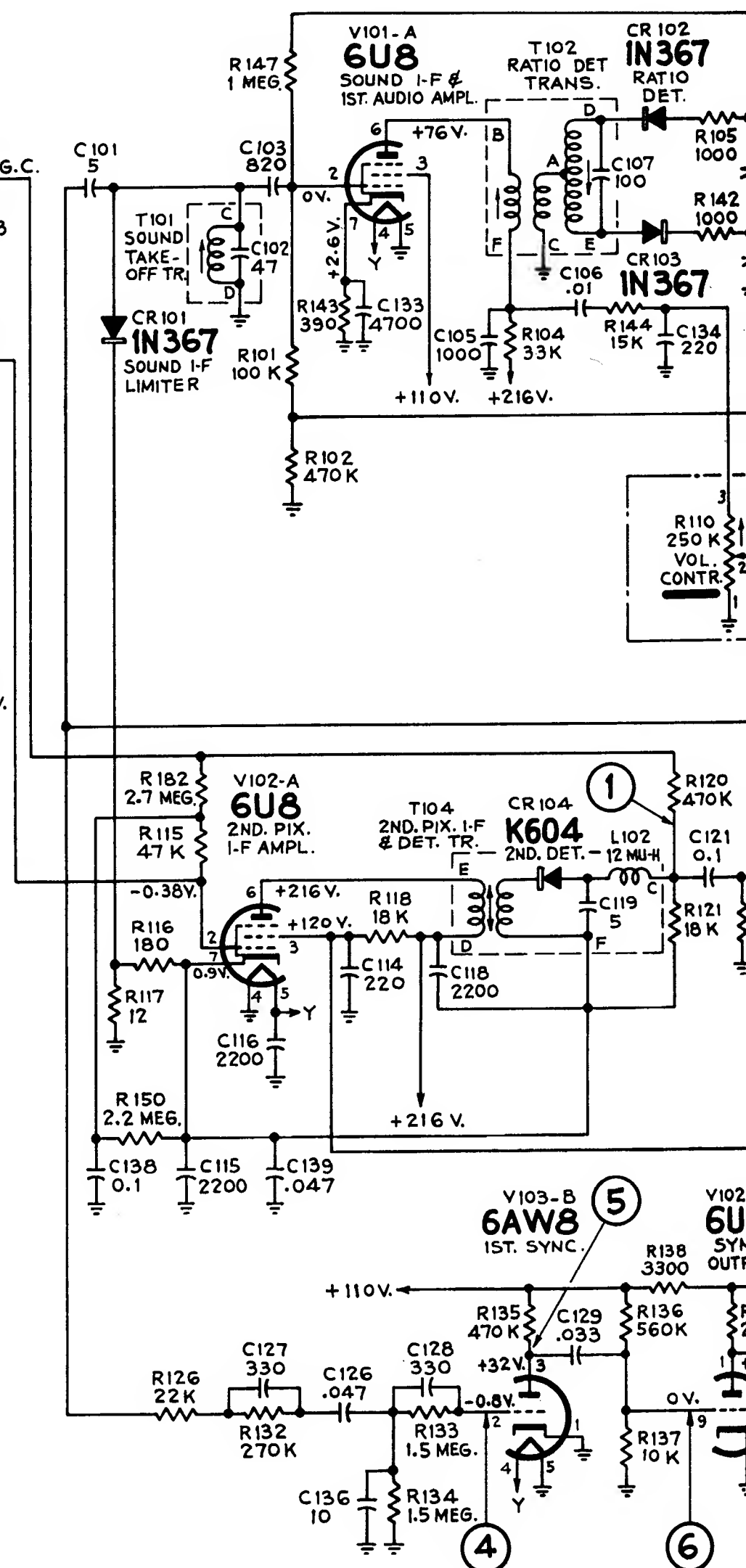
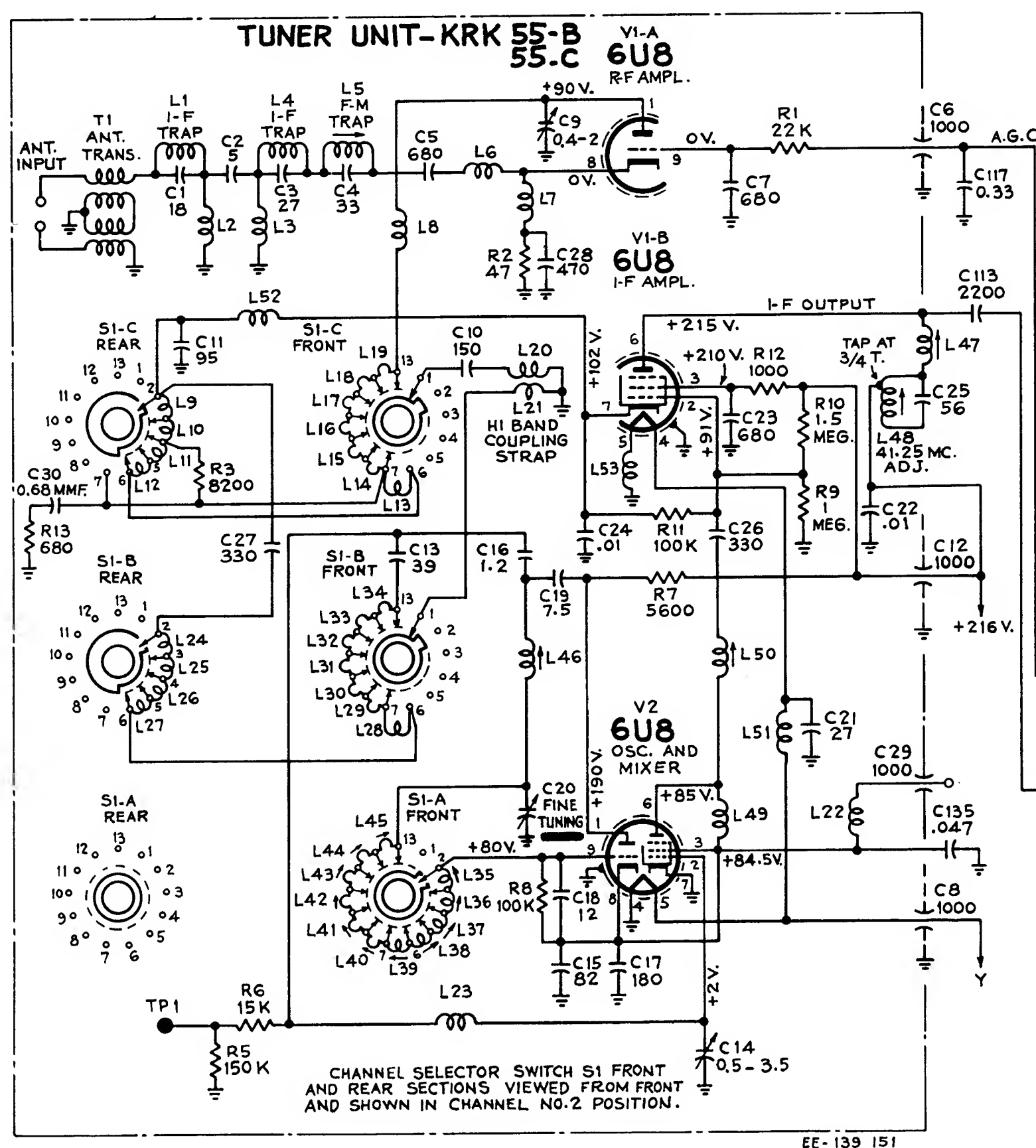
SCOPE AND SAFETY GLASS CLEANING.—The safety glass frame may be removed to allow for cleaning of the kinescope faceplate and the safety glass window if required.

To remove the chassis assembly must be removed from the cabinet (See section on CHASSIS REMOVAL). With the chassis out of the cabinet remove the three screws from the front mask and safety glass frame to the mounting strap assembly.

Remove the kinescope faceplate and the safety glass or plastic window. The window should only be cleaned with a soft cloth and water. Care should be taken not to scratch the surface of the plastic window.

CHASSIS DESIGNATIONS

COMPLETE CHASSIS ASSEMBLY	INCLUDES SUBCHASSIS	TUNER	MODELS
KCS100B	KCS100 (Front) KCS100A (Rear)	KRK55A or KRK55B	8-PT-7030 8-PT-7031 8-PT-7032 8-PT-7034
KCS100D	KCS100J (Front) KCS100C (Rear)	KRK55C	8-PT-7010 8-PT-7011 8-PT-7012 8-PT-7014
KCS100K	KCS100J (Front) KCS100A (Rear)	KRK55B	8-PT-7030T 8-PT-7031T 8-PT-7032T 8-PT-7034T



KINESCOPE REPLACEMENT.—Remove the chassis from the cabinet as outlined under CHASSIS REMOVAL. Take off the front safety glass frame by removing the three screws holding the frame to the kinescope mounting strap. Turn the screw, shown at point "C" in MAGNET ADJUSTMENTS drawing, counter-clockwise moving the yoke away from the bell of the kinescope. Take off the kinescope socket, the ion trap magnet with its sleeve and disconnect the high voltage lead.

Loosen the screw on the kinescope mounting strap, refer to MAGNET ADJUSTMENTS drawing, and slide the kinescope out of the yoke.

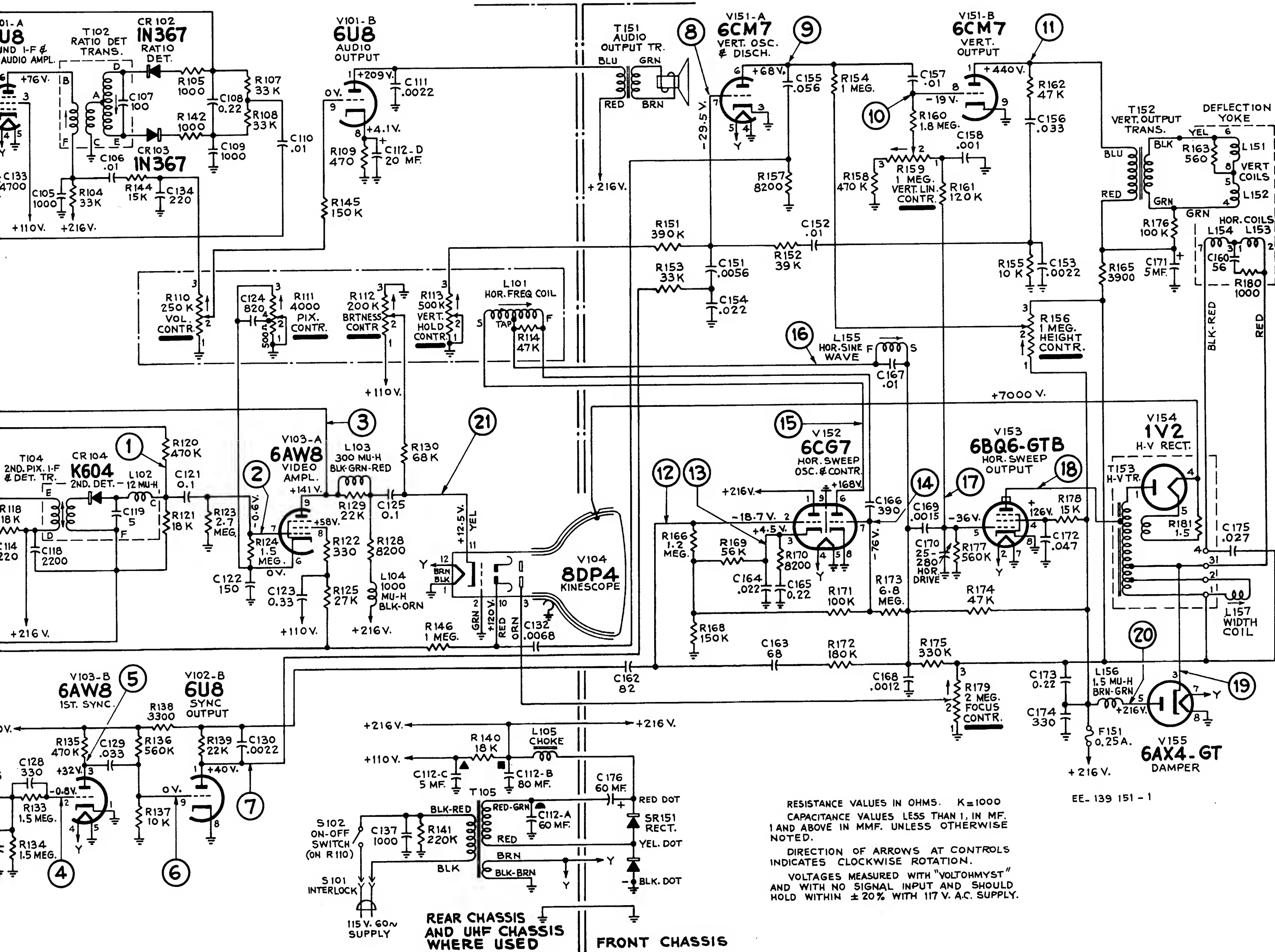
Install the new kinescope and tighten the screw on the strap around the front edge of the kinescope. Turn the yoke positioning screw clockwise to bring the yoke forward against the kinescope bell. Replace the front safety glass frame, ion trap magnet and sleeve and the kinescope socket. The sleeve between the kinescope neck and the ion trap magnet should not extend more than $\frac{3}{8}$ " beyond the yoke hood after adjustment of the ion trap magnet has been made.

The schematic is shown in the latest condition at the time of printing.

All resistance value in ohms. K = 1000.

Direction of arrows at controls indicates clockwise rotation.

OPERATION OF THESE RECEIVERS.
POWER SUPPLIES. WORK ON THESE RECEIVERS ONLY IF YOU ARE FAMILIAR WITH THE PRECAUTIONS FOR THE KINESCOPE COATING BEING USED. INSTALLING THE CHASSIS IN



shown in the latest
of printing.
in ohms. K = 1000.
at controls indi-
n.

All capacitance values less than 1 in
MF and above 1 in MMF unless otherwise
noted.

All voltages measured with "Volt-Ohm-
yst" ® and with no signal input. Voltages
should hold within $\pm 20\%$ with 117 v.
a-c supply.

HIGH VOLTAGE WARNING

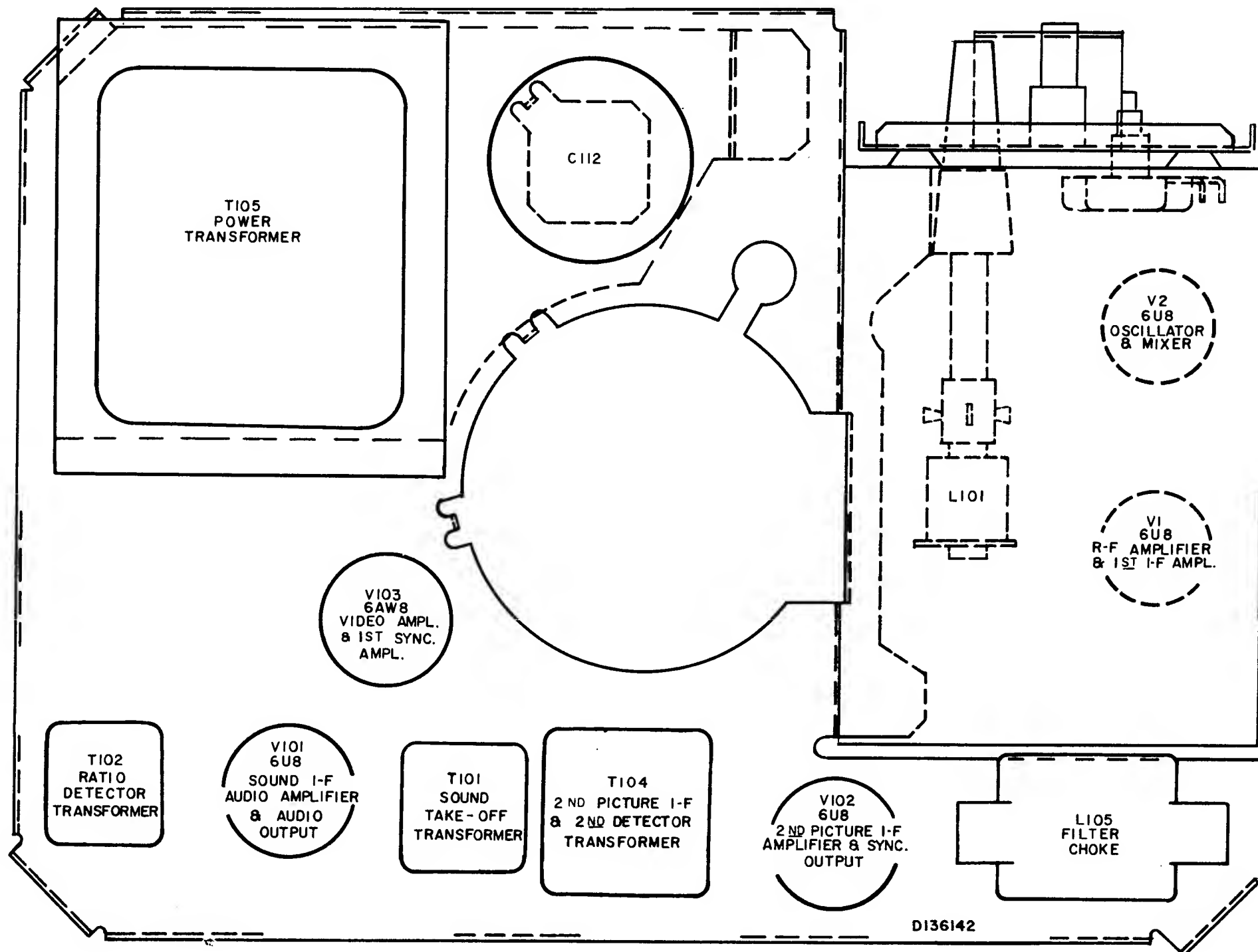
ON OF THESE RECEIVERS OUTSIDE THE CABINET INVOLVES A SHOCK HAZARD FROM THE RECEIVER
SUPPLIES. WORK ON THE RECEIVER SHOULD NOT BE ATTEMPTED BY ANYONE WHO IS NOT THOROUGHLY
WITH THE PRECAUTIONS NECESSARY WHEN WORKING ON HIGH VOLTAGE EQUIPMENT. MAKE SURE THE
NG SPRING ON THE KINESCOPE MOUNTING STRAP IS SECURELY FASTENED AND MAKING CONTACT WITH
SCOPE COATING BEFORE TURNING THE RECEIVER ON. REPLACE ALL INSULATING BOARDS BEFORE RE-
G THE CHASSIS IN THE CABINET.



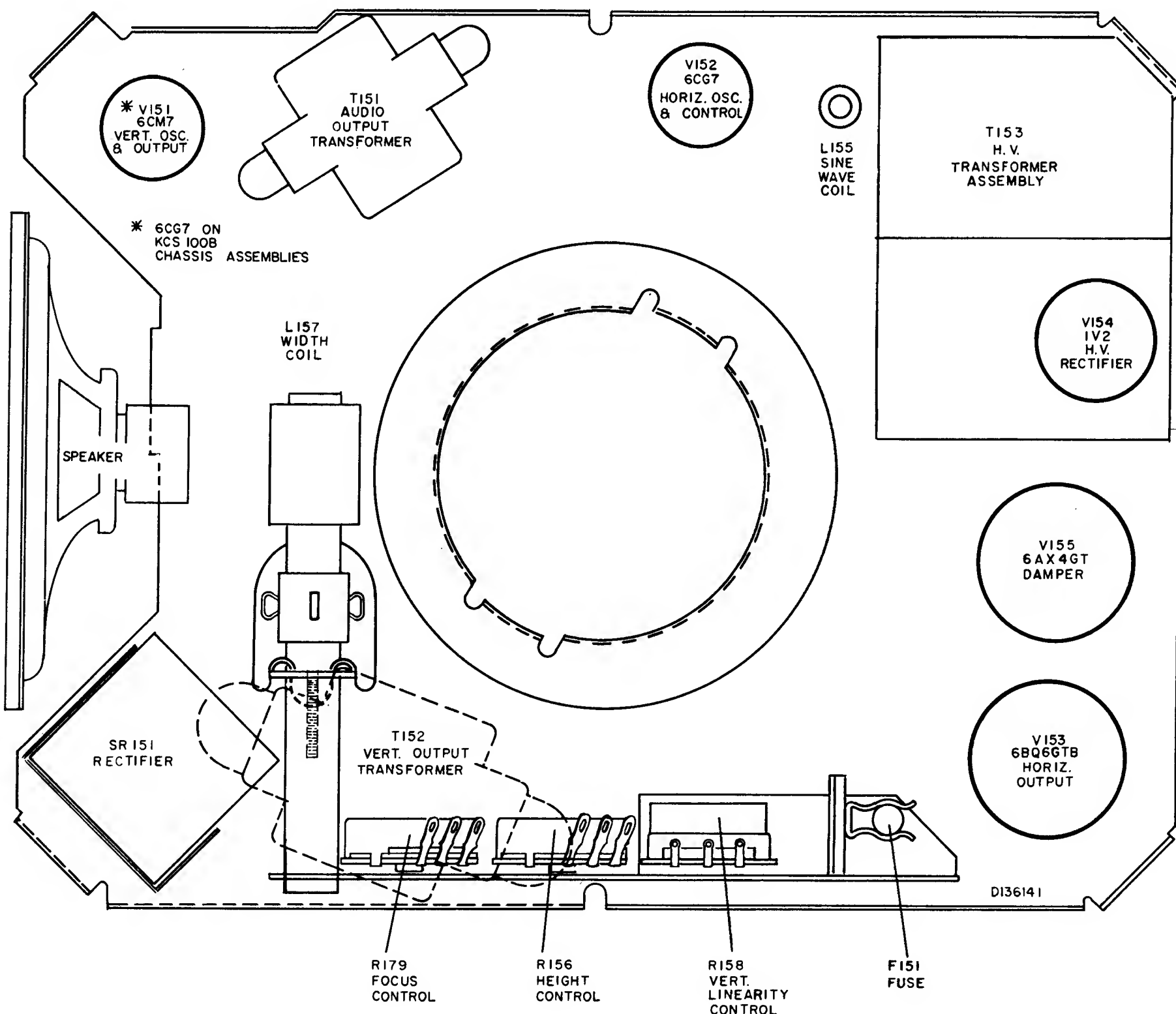
FIELD SERVICE DATA SHEET

8-PT-7010
8-PT-7030
SERIES

8-PT-7010
8-PT-7030
SERIES



REAR CHASSIS—TUBE SIDE



FRONT CHASSIS—TUBE SIDE

KCS100B, D, K

ADJ

Extend the rods bottom section is tion and rod leng being used. For M the external ante rear.

Plug the power the receiver "ON However, a check made.

†1. Check p necessary rea mum raster b as far clockw focus can be

*2. Check ra Adjust yoke insert a screw either point " JUSTMENTS d the hood.

3. Check w and drive adj below.

*4. Check fo hold control. S more of the required.)

*5. Check o made with th magnet or by the discs with teeth of the dis

6. Check h controls where top and bottom

*7. Check fo weak signal. justment, if ne Adjust fine then adjust so sound signal. when making

8. Check R of fine tuning s sary starting o lowest. Be sur making adjust

Width, Horizont

- Set brightn
- Adjust driv until line ju fully count
- Adjust wid normal lin Repeat Ste
- Turn the h of sync, to tion occurs.
- Adjust sine control is r in position, fall out poi

*Chassis must these adjustm tion.

†On late produ moving the a cabinet rear.

PREPARED BY COMMERCIAL SERVICE
RCA SERVICE CO., INC.
CAMDEN 8, N. J.

FOR
RADIO CORPORATION OF AMERICA
RCA VICTOR TELEVISION DIVISION



KCS100B, D, K

ADJUSTMENT CHECK LIST

Extend the rods of the cabinet antenna making sure the bottom section is fully extended. Adjust the angle, rotation and rod length for best picture and sound on channel being used. For Models without a cabinet antenna connect the external antenna to the terminal board on the cabinet rear.

Plug the power cord into the 117V. AC outlet and turn the receiver "ON." The receiver should operate normally. However, a check of the following adjustments should be made.

†1. Check position of ion trap magnet and if necessary readjust the ion trap magnet for maximum raster brightness with the brightness control as far clockwise as possible with which good line focus can be maintained.

*2. Check raster for proper framing (tilt) in mask. Adjust yoke positioning by rotating. To do this insert a screwdriver into the serrated collar at either point "A" or "B" shown in MAGNET ADJUSTMENTS drawing and pry against the edge of the hood.

3. Check width of the picture. Readjust width and drive adjustments, if necessary, as indicated below.

*4. Check for normal operation of the horizontal hold control. Should hold sync for two full turns or more of the control. (See below if adjustment is required.)

*5. Check centering of picture. Adjustment is made with the individual discs of the centering magnet or by rotating both discs together. Rotate the discs with a small screwdriver inserted in the teeth of the discs.

6. Check height and vertical linearity. Reset controls where necessary for 1/4" overscan at both top and bottom.

*7. Check for sound and picture tracking on a weak signal. Readjust 41.25 mc. sound boost adjustment, if necessary, as follows:

Adjust fine tuning for maximum picture signal, then adjust sound boost adjustment for maximum sound signal. The weakest channel must be used when making this adjustment.

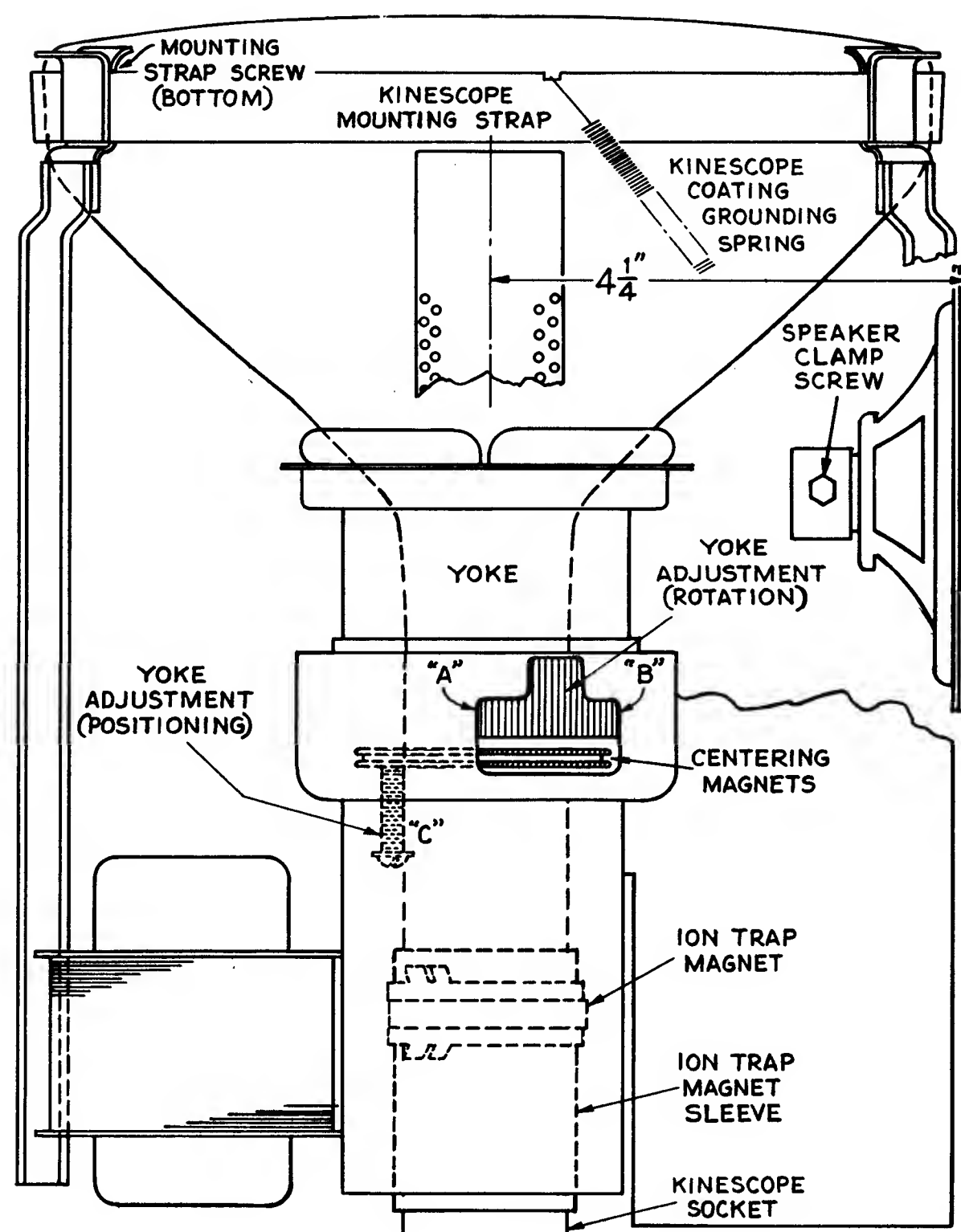
8. Check R-F oscillator adjustments at 84° point of fine tuning shown on drawing. Readjust if necessary starting at highest channel proceeding to the lowest. Be sure fine tuning is at 84° point when making adjustments.

Width, Horizontal Drive and Sinewave Adjustments

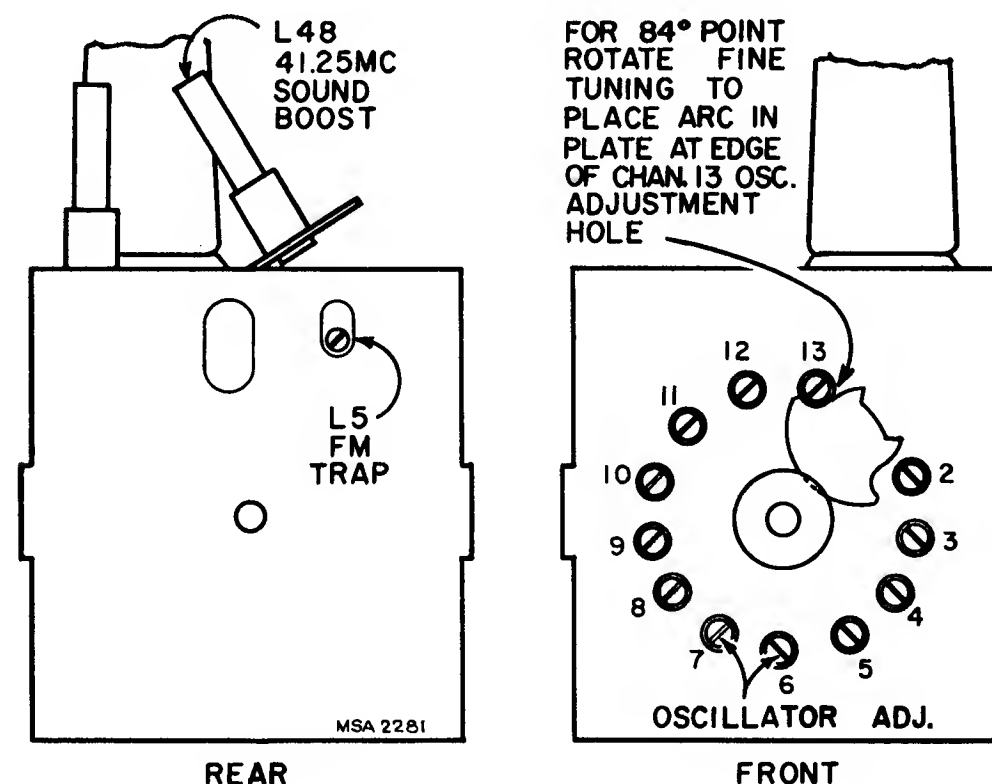
- Set brightness control fully clockwise.
- Adjust drive for overdrive line then clockwise until line just disappears. If no line appears set fully counter-clockwise.
- Adjust width for 1/4" overscan at each side, with normal line voltage and normal brightness. Repeat Step B.
- Turn the horizontal hold control to the left, out of sync, to the point where interrupted oscillation occurs.
- Adjust sinewave core, as the horizontal hold control is rotated to the left beyond the locked-in position, until 3 to 4 bars occur between the fall out point and interrupted oscillation.

*Chassis must be removed from the case to make these adjustments, see CHASSIS REMOVAL section.

†On late production, adjustment is accessible by removing the antenna or terminal board plate on cabinet rear.



MAGNET ADJUSTMENTS



SOUND BOOST AND R-F OSCILLATOR ADJUSTMENTS

CHASSIS REMOVAL.—The chassis must be removed from the cabinet to replace tubes or the kinescope and to perform certain adjustments as explained above.

Take the receiver off its stand and completely remove the two knurled screws at the sides of the cabinet on all Models with stand provided. Never attempt to remove the chassis unless these two screws are completely removed, as their projection inside the cabinet may result in internal damage as the chassis is pulled from the case. Refer to CHASSIS REMOVAL drawing.

Remove the knobs on the controls located in the cover and case assembly and take out the three screws holding the assembly to the cabinet. Their location is indicated at "A." Lift the control case and cover directly upward to remove.

Take off the carrying handle by removing the two screws at the ends of the handle. Also, remove the screw



FIELD SERVICE DATA SHEET

8-PT-7010
8-PT-7030
SERIES

8-PT-7010
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at the bottom front edge of the receiver case. These three screws are indicated at "B."

Slide the chassis assembly, which includes the front frame and kinescope, out of the receiver cabinet. The A.C. interlock will automatically disengage as the chassis is removed.

CHASSIS SERVICING.—Adjustment of the yoke position, centering magnets and the ion trap magnet may be made with the chassis completely assembled as shown in "B" of CHASSIS SERVICING drawing. The location of these adjustments is on the bottom of the front chassis section.

Replacement of the tubes in the tuner unit requires removal of the speaker. To remove the speaker, loosen the speaker clamp screw shown in MAGNET ADJUSTMENTS drawing and slide the speaker out of its clamp. This will allow room to make tube replacement in the tuner unit.

Service which requires circuit tracing or voltage measurements must be performed with the front and rear chassis sections separated. To do this, remove the six (6)

or nine (9) self-tapping screws holding the front and rear chassis sections together. See "B" of CHASSIS SERVICING drawing. Remove only the screws indicated. The positions of the insulating boards should be noted for replacement when reassembling the chassis.

Unplug the kinescope socket and slide the rear chassis section off the end of the kinescope neck. Turn the chassis around making the bottom wiring side visible and reconnect the kinescope socket.

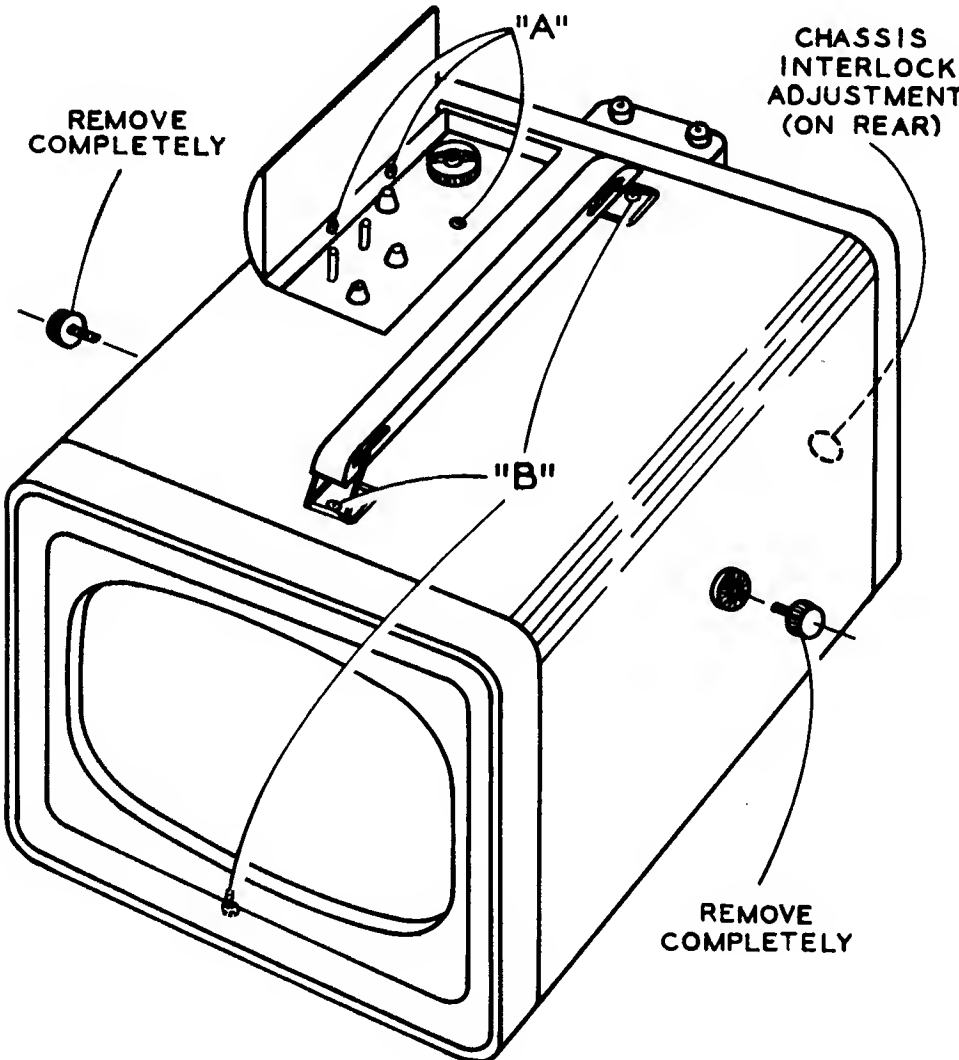
REPLACING THE CHASSIS IN THE CABINET.—Replacement of the chassis in the cabinet is simply a reversal of the removal procedure with several important additional steps to be performed.

Make sure the insulating boards have been replaced in their proper positions. The boards are provided to prevent any thin metal object, which may fall or be inserted through the cabinet ventilating louvres, from coming in contact with high voltage circuits or from causing a short circuit to the cabinet.

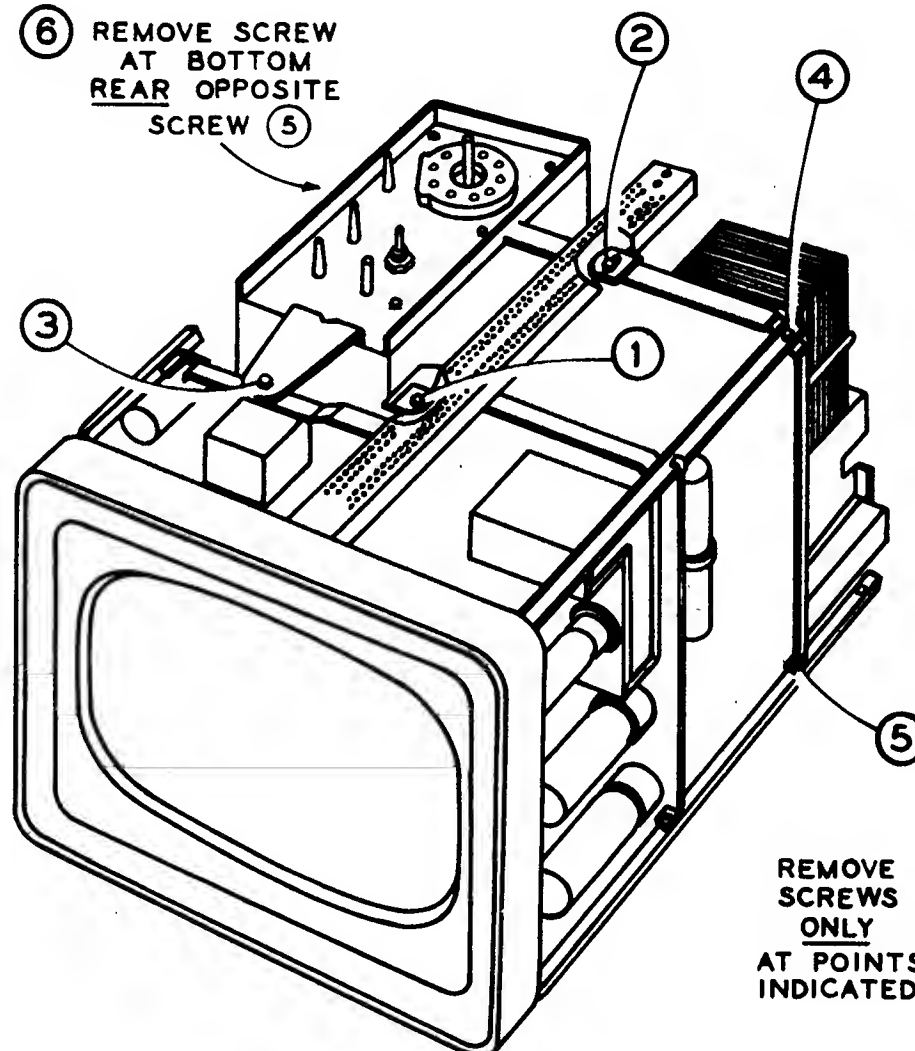
If the speaker was removed for tube replacement in the tuner, the speaker must be properly positioned before

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8-PT-701

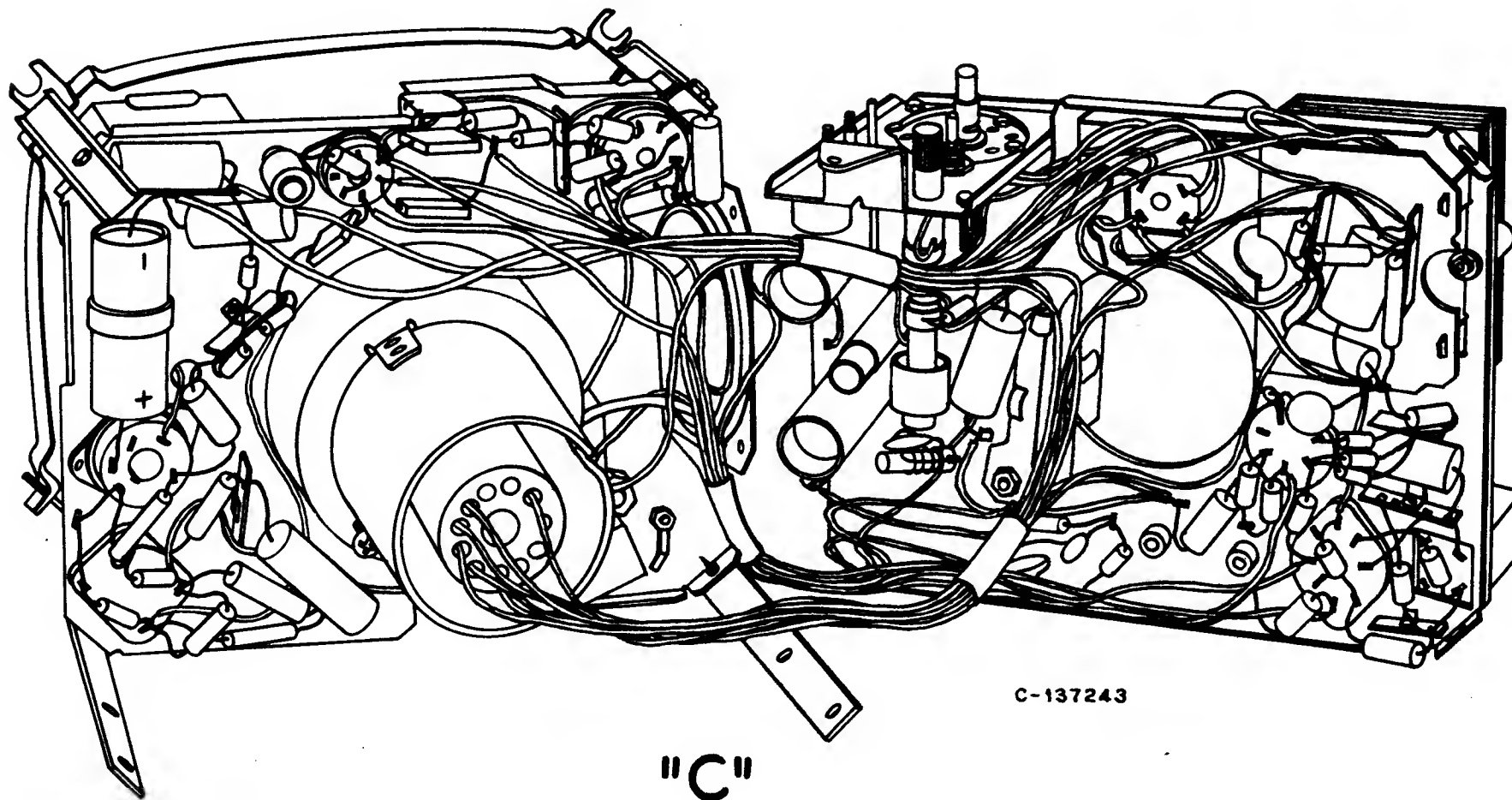
The A
button o



"A"



"B"



"C"

CHASSIS REMOVAL AND SERVICING

SYMBOL NO.

C101
C103
C105
C106
C108
C109
C110
C111
C113
C114
C115, C116
C117
C118
C121
C122
C123
C124
C125
C126
C127, C128
C129
C130
C131
C134
C135
C136
C137
C138
C139
C153
C154
C155
C155
C156
C156
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C158
C162
C163
C164
C165
C166

8-PT-7010 8-PT-7030 SERIES



FIELD SERVICE DATA SHEET

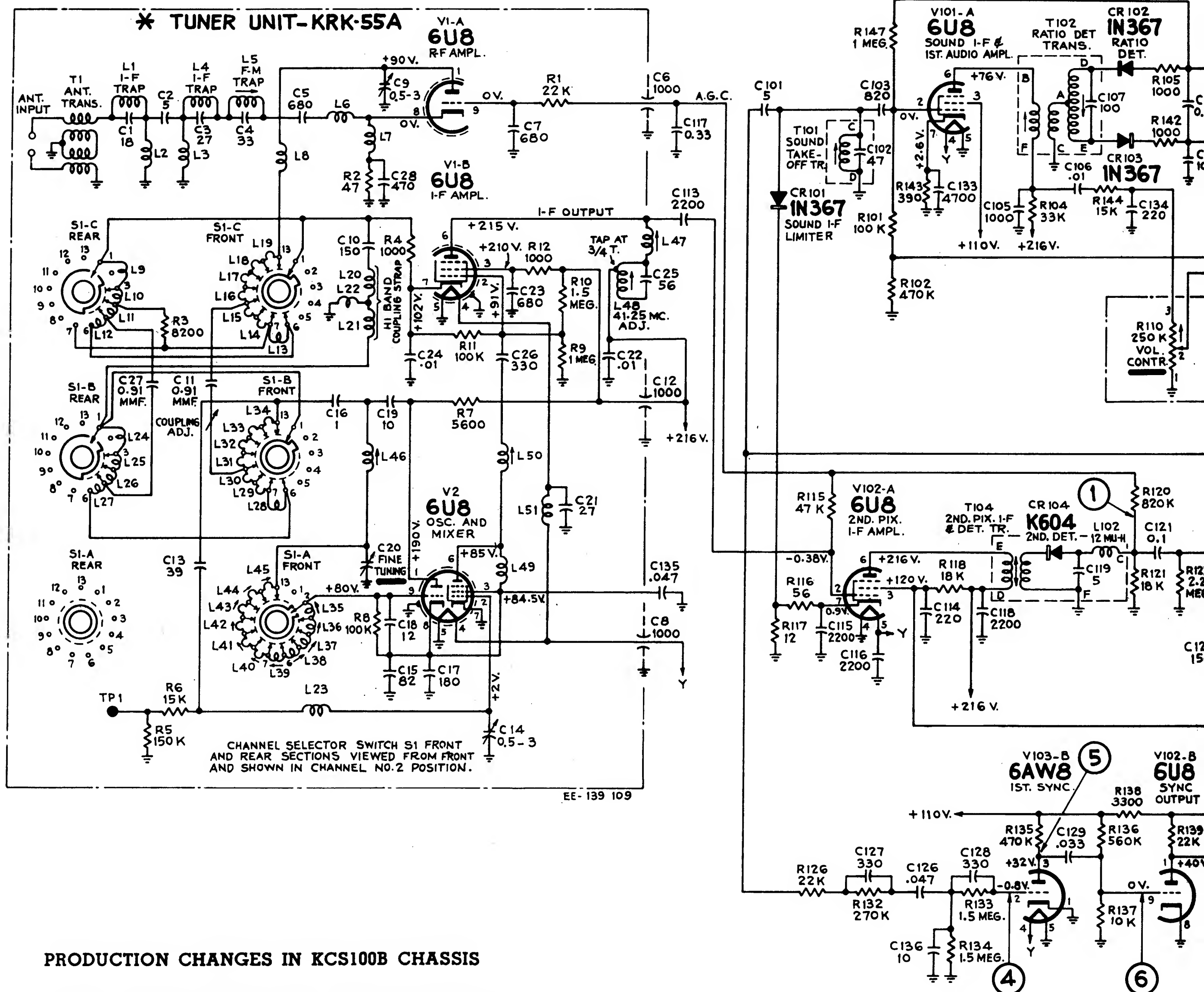
replacement of the chassis in the cabinet. The face of the speaker baffle must be exactly four and one-quarter inches (4 1/4") from the centerline of the chassis as shown in MAGNET ADJUSTMENTS drawing. The chassis will not slide into the case properly if the speaker extends out too far. When the speaker does not extend sufficiently, sound echoes may occur within the cabinet. Reconnect the antenna leads and replace the antenna on R or RU and 8-PT-701 Series Models.

The A.C. interlock screw, located under the snap-out button on the cabinet rear, should be readjusted if the

front and rear chassis sections were separated when servicing. Turn the adjustment screw fully counter-clockwise moving the interlock plug toward the cabinet rear. Proper alignment of the interlock plug and the antenna terminals is automatically achieved by the locating stud on the interlock as the chassis is inserted in the cabinet. After the chassis has been replaced in the cabinet and securely fastened, the A.C. interlock adjustment screw should be turned fully clockwise to insure proper contact in its receptacle. When replacing the screws holding the chassis in the cabinet, the screw under the bottom front edge of the cabinet should be replaced first.

REPLACEMENT PARTS (Partial Listing)

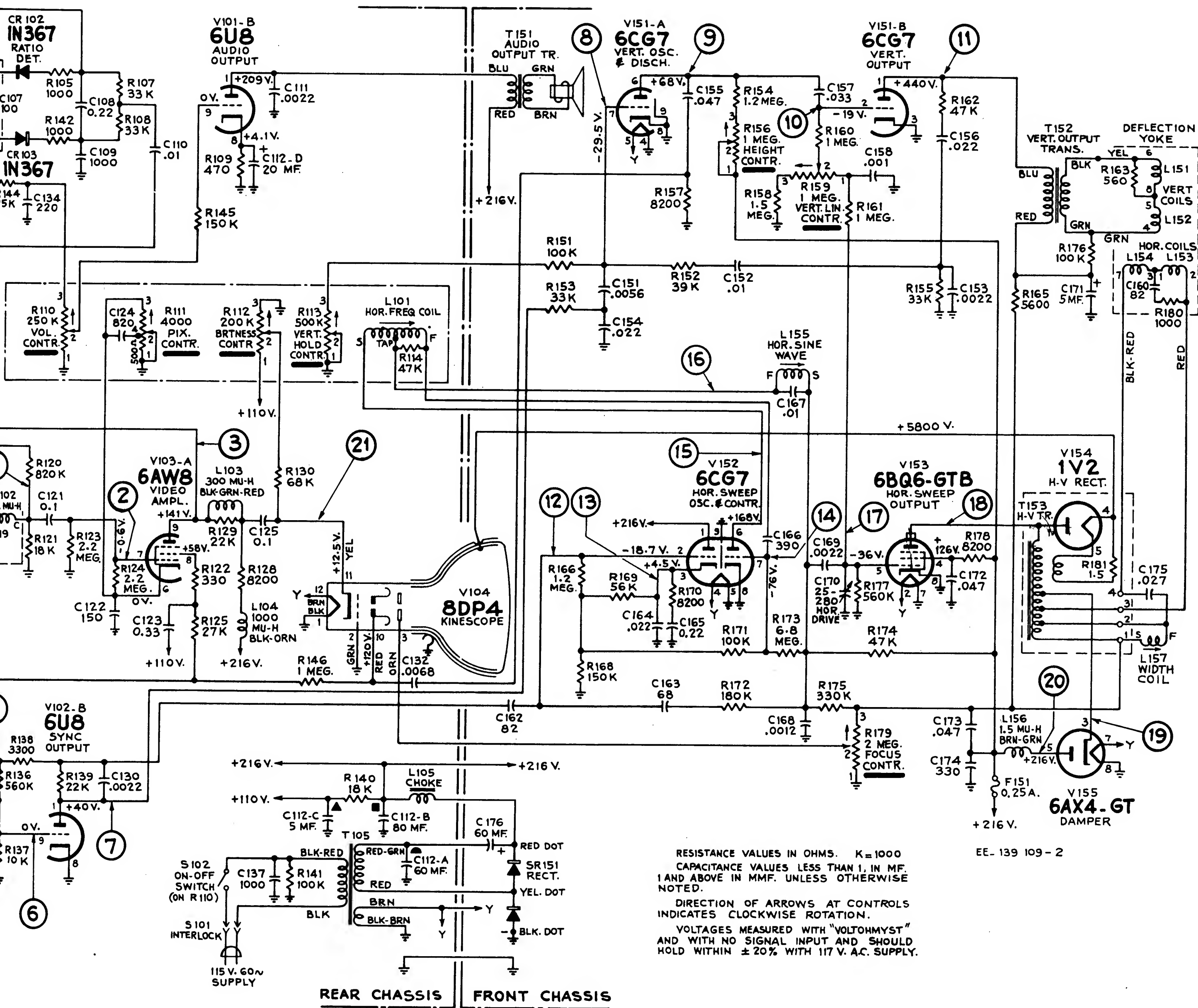
SYMBOL NO.	STOCK NO.	DESCRIPTION	SYMBOL NO.	STOCK NO.	DESCRIPTION
C101	102072	Capacitor—Fixed, ceramic, 5 mmf., ± 1 mmf., 500 v.	C167	73594	Capacitor—Fixed, paper, .01 mf., $\pm 5\%$, 600 v.
C103	102356	Capacitor—Fixed, ceramic, 820 mmf., $\pm 20\%$, 500 v.	C168	76995	Capacitor—Fixed, paper, .0012 mf., $\pm 5\%$, 600 v.
C105	78623	Capacitor—Fixed, ceramic, 1000 mmf., $\pm 20\%$, 500 v.	C169		Same as C153 (KCS100B only)
C106	102384	Capacitor—Fixed, paper, .01 mf., $\pm 20\%$, 400 v.	C169	102216	Capacitor—Fixed, paper, .0015 mf., $\pm 10\%$, 400 v. (KCS100D & KCS100K)
C108	79740	Capacitor—Fixed, paper, 0.22 mf., $\pm 20\%$, 200 v.	C173	102088	Capacitor—Fixed, paper, .047 mf., $\pm 20\%$, 600 v. (KCS100B only)
C109		Same as C105	C173	78923	Capacitor—Fixed, paper, 0.22 mf., $\pm 10\%$, 400 v. (KCS100D & KCS100K)
C110	77424	Capacitor—Fixed, paper, .01 mf., $\pm 20\%$, 200 v.	C174	102089	Capacitor—Fixed, ceramic, 330 mmf., $\pm 100 - 0\%$, 500 v.
C111	102073	Capacitor—Fixed, paper, .0022 mf., $\pm 20\%$, 600 v.	C175	100369	Capacitor—Fixed, paper, .033 mf., $\pm 10\%$, 400 v. (Early production—KCS100B only)
C113	102074	Capacitor—Fixed, ceramic, 2200 mmf., $\pm 20\%$, 500 v.	C175	103131	Capacitor—Fixed, paper, .027 mf., $\pm 10\%$, 400 v. (KCS100D, KCS100K and late production KCS100B)
C114	77625	Capacitor—Fixed, ceramic, 220 mmf., $\pm 100 - 0\%$, 500 v.	CR101 to CR103 Incl.	100844	Rectifier—Crystal diode
C115, C116	77953	Capacitor—Fixed, ceramic, 2200 mmf., $\pm 100 - 0\%$, 500 v.	F101	72104	Fuse—.25 amp., 250 v.
C117	102075	Capacitor—Fixed, paper, 0.33 mf., $\pm 20\%$, 200 v.	L157	102054	Coil—Width coil
C118		Same as C115	R110	102055	Control—"On-Off" volume control Includes S102
C121	79251	Capacitor—Fixed, paper, 0.1 mf., $\pm 20\%$, 200 v.	R111	102058	Control—Contrast control
C122	78276	Capacitor—Fixed, ceramic, 150 mmf., $\pm 10\%$, 500 v.	R112	102056	Control—Brightness control
C123		Same as C117	R113	102057	Control—Vertical hold control
C124	102084	Capacitor—Fixed, ceramic, 820 mmf., $\pm 10\%$, 500 v.	R156	102060	Control—Height control
C125	77423	Capacitor—Fixed, paper, 0.1 mf., $\pm 20\%$, 400 v.	R159	102059	Control—Vertical linearity
C126	77422	Capacitor—Fixed, paper, .047 mf., $\pm 20\%$, 400 v.	R179	102061	Control—Focus control
C127, C128	76552	Capacitor—Fixed, ceramic, 330 mmf., $\pm 10\%$, 500 v.	S102		Part of R110
C129	102077	Capacitor—Fixed, paper, .033 mf., $\pm 20\%$, 200 v.	SR151	102076	Rectifier—Selenium
C130	77942	Capacitor—Fixed, paper, .0022 mf., $\pm 20\%$, 200 v.	T152	102046	Transformer—Vertical output (KCS100B only)
C131	78921-A	Capacitor—Fixed, paper, 0.47 mf., $\pm 20\%$, 200 v.	T152	103266	Transformer—Vertical output (KCS100D & KCS100K)
C134		Same as C114	T153	102045	Transformer—Horizontal output and high voltage transformer—Includes Connector 78238 (KCS100B only)
C135		Same as C126	T153	102985	Transformer—Horizontal output and high voltage transformer—Includes connector 78238 (KCS100D & KCS100K)
C136	33098	Capacitor—Fixed, ceramic, 10 mmf., $\pm 10\%$, 500 v.		102343	Cord—Power cord
C137	100124	Capacitor—Fixed, ceramic, 1000 mmf., $\pm 10\%$, 1000 v.		102096A	Handle—Case carrying handle—red—high impac polystyrene—For Models 8PT7010, 8PT7030 & 8PT7030T
C138	79251	Capacitor—Fixed, paper, 0.1 mf., 200 v. DC (KCS100D & KCS100K)		102097A	Handle—Case carrying handle—gray—high impac polystyrene—For Models 8PT7011, 8PT7031 & 8PT7031T
C139	78921-A	Capacitor—Fixed, paper, .047 mf., 200 v. DC (KCS100D & KCS100K)		102797A	Handle—Case carrying handle—black—high impac polystyrene—For Models 8PT7012, 8PT7032 & 8PT7032T
C153	102079	Capacitor—Fixed, paper, .0022 mf., $\pm 10\%$, 400 v.		102098A	Handle—Case carrying handle—ivory—high impac polystyrene—For Models 8PT7014, 8PT7034 & 8PT7034T
C154	79932	Capacitor—Fixed, paper, .022 mf., $\pm 10\%$, 400 v.		102092A	Knob—Channel selector knob—gray
C155	78921-A	Capacitor—Fixed, paper, .047 mf., $\pm 10\%$, 200 v. (KCS100B only)		102091	Knob—Fine tuning control knob
C155	103269	Capacitor—Fixed, paper, .056 mf., $\pm 10\%$, 200 v. (KCS100D & KCS100K)		102093	Knob—"On-Off" volume or contrast control
C156	102080	Capacitor—Fixed, paper, .022 mf., $\pm 10\%$, 200 v. (KCS100B only)		102095	Knob—Vertical hold or brightness control knob
C156	102227	Capacitor—Fixed, paper, .033 mf., $\pm 10\%$, 600 v. (KCS100D & KCS100K)		102099	Link—Case carrying handle link brass
C157	102077	Capacitor—Fixed, paper, .033 mf., $\pm 20\%$, 200 v. (KCS100B only)		102063	Magnet—Centering magnet assembly
C157	102384	Capacitor—Fixed, paper, .01 mf., $\pm 20\%$, 400 v. (KCS100D & KCS100K)		102065	Magnet—Ion trap magnet
C158	77533	Capacitor—Fixed, paper, .001 mf., $\pm 20\%$, 200 v.		102104	Speaker—3 1/2" P.M. speaker complete with cone and voice coil (3.2 ohms)
C162	76474	Capacitor—Fixed, mica, 82 mmf., $\pm 10\%$, 1000 v.		102110	Support—Handle support—red—For Models 8PT7010, 8PT7030 & 8PT7030T
C163	76475	Capacitor—Fixed, mica, 68 mmf., $\pm 5\%$, 1000 v.		102111	Support—Handle support—gray—For Models 8PT7011, 8PT7031 & 8PT7031T
C164		Same as C133		102799	Support—Handle support—black—For Models 8PT7012, 8PT7032 & 8PT7032T
C165	79740	Capacitor—Fixed, paper, 0.22 mf., $\pm 20\%$, 200 v.		102112	Support—Handle support—ivory—For Models 8PT7014, 8PT7034 & 8PT7034T
C166	102512	Capacitor—Fixed, mica, 330 mmf., $\pm 5\%$, 1000 v.		102062	Yoke—Deflection yoke (KCS100B only)
				103267	Yoke—Deflection yoke (KCS100D & KCS100K)



The schematic is shown in the latest condition at the time of printing.
All resistance value in ohms. K = 1000.

All capacitance values MF and above 1 in MMF noted.

Balloons ①② etc., shown on schematic above, and on Figure 48, indicate points of observation of the waveforms shown on pages 20 to 22.

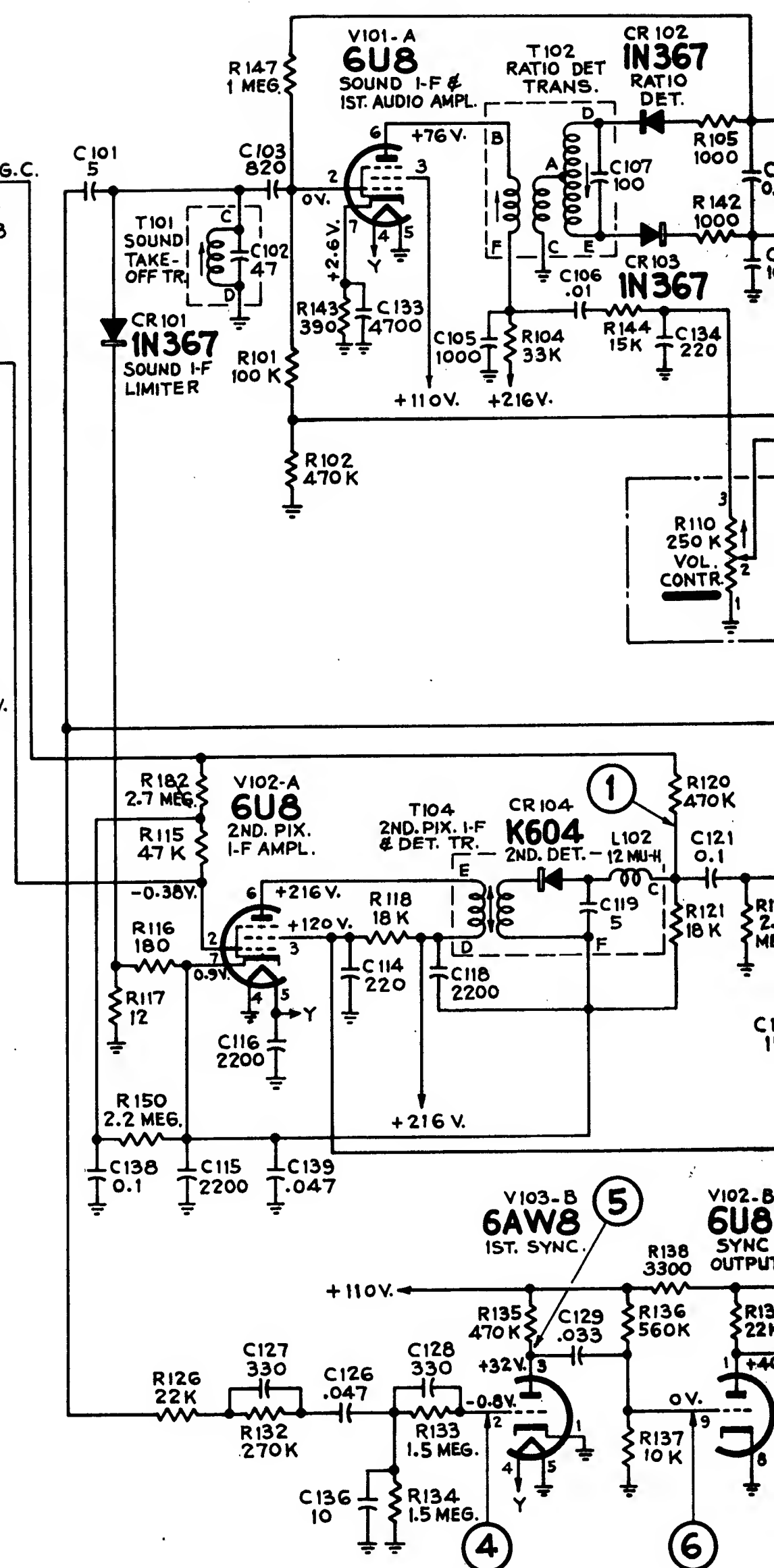
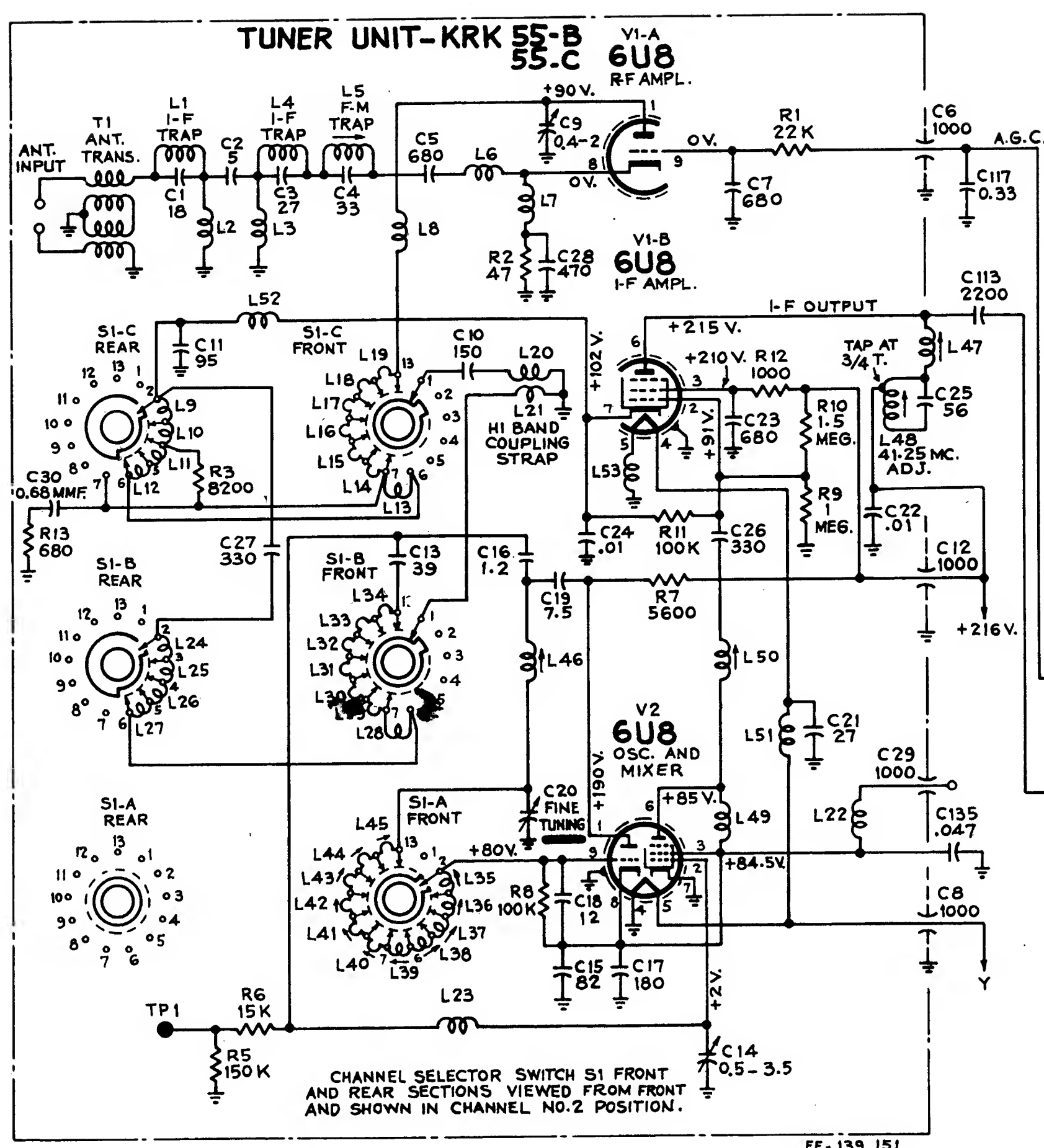


Resistance values less than 1 in MMF unless otherwise

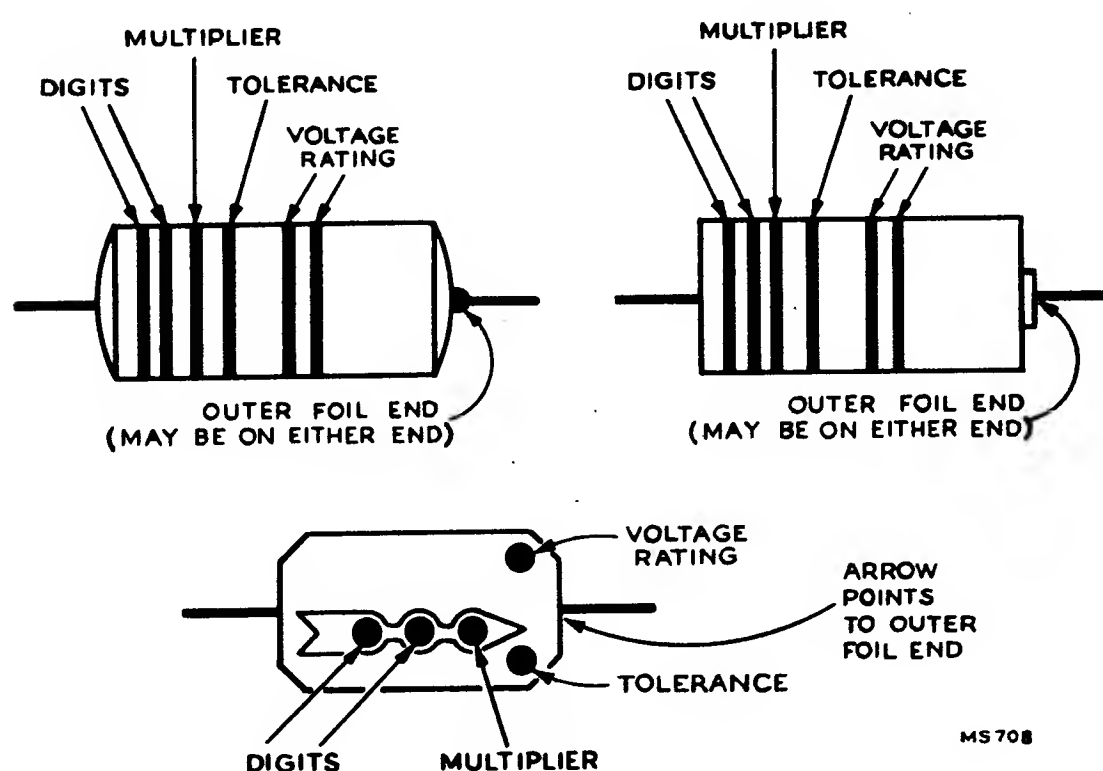
Direction of arrows at controls indicates clockwise rotation.

All voltages measured with "VoltOhmyst" ® and with no signal input. Voltages should hold within $\pm 20\%$ with 117 v. a-c supply.

Figure 47—Circuit Schematic Diagram KCS100B



COLOR CODES MOULDED PAPER CAPACITORS

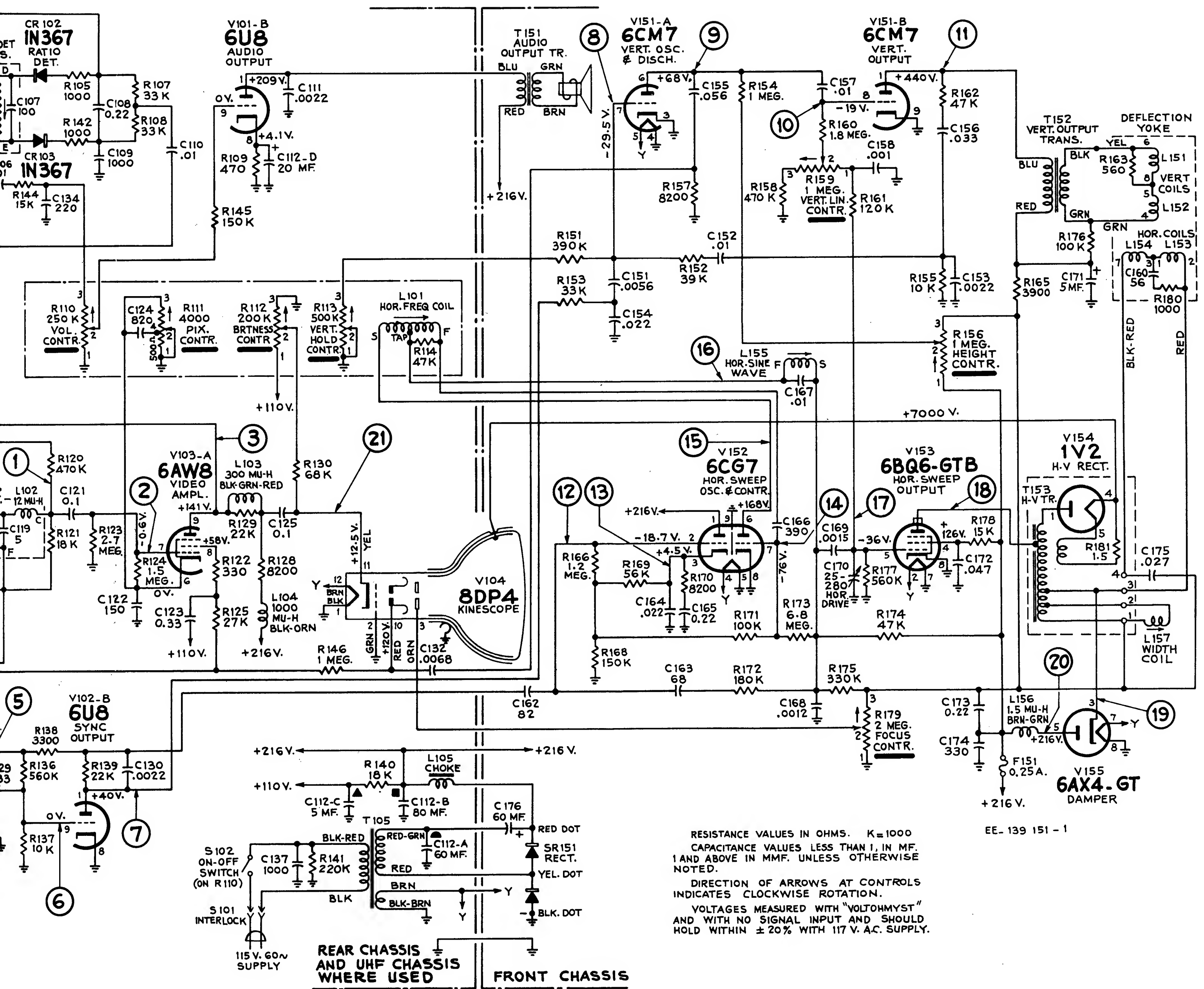


The schematic is shown in the latest condition at the time of printing.

All resistance value in ohms. $K = 1000$.

All capacitance values
MF and above 1 in MMF u
noted.

**REFER TO TABLE ON PAGE TWO FOR
CHASSIS TO MODEL CROSS-REFERENCE**



capacitance values less than 1 in
above 1 in MMF unless otherwise

Direction of arrows at controls indi-
cates clockwise rotation.

All voltages measured with "Volt-
Ohmyst" and with no signal input. Volt-
ages should hold within $\pm 20\%$ with 117
v. a-c supply.

Figure 48—Circuit
Schematic Diagram
KCS100D & KCS100K

SYMBOL NO.	STOCK NO.	DESCRIPTION	SYMBOL NO.	STOCK NO.	DESCRIPTION
TUNER UNIT ASSEMBLIES KRK55A, KRK55B & KRK55C			R3	502282	Resistor—Fixed, composition, 8200 ohms, $\pm 10\%$, $\frac{1}{2}$ watt
C1	102575	Capacitor — Fixed, ceramic, 18 mmf., $\pm 5\%$, 500 v. DC (Part of T1)	R4	502210	Resistor—Fixed, composition, 1000 ohms, $\pm 20\%$, $\frac{1}{2}$ watt
C2	102571	Capacitor—Fixed, ceramic, 5 mmf., $\pm 5\%$, 500 v. DC (Part of T1)	R5	502415	Resistor — Fixed, composition, 150,000 ohms, $\pm 20\%$, $\frac{1}{2}$ watt
C3	102574	Capacitor — Fixed, ceramic, 27 mmf., $\pm 5\%$, 500 v. DC (Part of T1)	R6	502315	Resistor—Fixed, composition, 15,000 ohms, $\pm 20\%$, $\frac{1}{2}$ watt
C4	102573	Capacitor — Fixed, ceramic, 33 mmf., $\pm 10\%$, 500 v. DC (Part of T1)	R7	502256	Resistor—Fixed, composition, 5600 ohms, $\pm 10\%$, $\frac{1}{2}$ watt
C5	77624	Capacitor — Fixed, ceramic, 680 mmf., $+100\%$ — 0% , 500 v. DC (Part of T1)	R8	502410	Resistor — Fixed, composition, 100,000 ohms, $\pm 20\%$, $\frac{1}{2}$ watt
C6	102563	Capacitor—Fixed, feed thru, 1000 mmf.	R9	502510	Resistor—Fixed, composition, 1.0 meg-ohm, $\pm 10\%$, $\frac{1}{2}$ watt
C7	77624	Capacitor — Fixed, ceramic, 680 mmf., $+100\%$ — 0% , 500 v. DC	R10	502515	Resistor—Fixed, composition, 1.5 meg-ohm, $\pm 10\%$, $\frac{1}{2}$ watt
C8	102563	Capacitor—Fixed, feed thru, 1000 mmf.	R11	502410	Resistor — Fixed, composition, 100,000 ohms, $\pm 20\%$, $\frac{1}{2}$ watt
C9	102564	Capacitor—Adjustable trimmer, ceramic, 0.5 - 3.0 mmf. (KRK55A only)	R12	502210	Resistor—Fixed, composition, 1000 ohms, $\pm 50\%$, $\frac{1}{2}$ watt
C9	103325	Capacitor—Adjustable trimmer, ceramic, 0.4-2.0 mmf. (KRK55B & C only)	R13	502168	Resistor—Fixed, composition, 680 ohms, $\pm 5\%$, $\frac{1}{2}$ w. (KRK55B & C only)
C10	102558	Capacitor — Fixed, ceramic, 150 mmf., $\pm 20\%$, 500 v. DC (Part of S1C)	S1A	102547	Stator — Oscillator stator complete with rotor and coils (KRK55A only)
C11	102577	Capacitor—Fixed, headed-lead type, .91 mmf., $\pm 20\%$, 500 v. DC (KRK55A only)	S1A	103323	Stator—Oscillator stator complete with rotor and coils (KRK55B & C only)
C11	103321	Capacitor—Fixed, ceramic, 95 mmf., $\pm 20\%$, 500 v. DC (KRK55B & C only)	S1B	102548	Stator—Mixer stator complete with rotor and coils (KRK55A only)
C12	102563	Capacitor—Fixed, feed thru, 1000 mmf.	S1B	102548	Stator—Mixer stator complete with rotor and coils (KRK55B & C only)
C13	102557	Capacitor — Fixed, ceramic, 39 mmf., $\pm 10\%$, N1500, 500 v. DC (Part of S1B)	S1C	102549	Stator—R-F Plate stator complete with rotor and coils (KRK55A only)
C14	102561	Capacitor—Adjustable trimmer, ceramic, 0.5 - 3.0 mmf. (KRK55A only)	S1C	103320	Stator—R-F plate stator complete with rotor and coils (KRK55B & C only)
C14	103326	Capacitor—Adjustable trimmer, ceramic, 0.5-3.5 mmf. (KRK55B & C only)	T1	102565	Board—Antenna matching section board complete. (Includes C1, C2, C3, C4, C28, L1, L2, L3, L4, L5, L6, L7, R2.)
C15	78603	Capacitor — Fixed, ceramic, 82 mmf., $\pm 10\%$, 500 v. DC		102576	Coil—Antenna matching section elevator coil (2 required)—Part of T1
C16	77690	Capacitor—Fixed, headed lead, 1.0 mmf., $\pm 20\%$, 500 v. DC (KRK55A only)		102550	Detent—RF tuning unit detent and shaft assembly complete
C16	78532	Capacitor—Fixed, headed-lead, 1.2 mmf., $\pm 20\%$, 500 v. DC (KRK55B & C only)		102552	Retainer—Fine tuning friction drive shaft and bushing retainer
C17	102562	Capacitor—Fixed, ceramic, 180 mmf., $\pm 10\%$, 500 v. DC		102554	Screw—Oscillator coil adjusting screw for channels 7, 8, 9, 10, 11, 12 (Part of S1A)
C18	79710	Capacitor—Fixed, ceramic, 12 mmf., $\pm 5\%$, N750, 500 v. DC		102555	Screw—Oscillator coil adjusting screw for channel 6 (Part of S1A)
C19	77865	Capacitor — Fixed, ceramic, 10 mmf., $\pm 10\%$, NPO, 500 v. DC (Part of S1A) (KRK55A only)		102556	Screw—Oscillator coil adjusting screw for channels 2, 3, 4, 5, 13 (Part of S1A)
C19	103318	Capacitor—Fixed, ceramic, 7.5 mmf., $\pm 10\%$, NPO, 500 v. DC (KRK55B & C only)		102551	Shaft—Fine tuning friction drive shaft and bushing
C20		Capacitor—Fine tuning trimmer capacitor (Part of detent assembly)		102570	Shield—Tube shield for V1, V2
C21	102560	Capacitor — Fixed, ceramic, 27 mmf., $\pm 10\%$, 500 v. DC		79366	Socket—Tube socket, 9 pin, for V1, V2
C22	73960	Capacitor — Fixed, ceramic, .01 mf., $+100\%$ — 0% , 500 v. DC		76220	Washer—"C" washer for fine tuning friction drive shaft
C23	77624	Capacitor — Fixed, ceramic, 680 mmf., $+100\%$ — 0% , 500 v. DC		102553	Washer—Spring washer for fine tuning friction drive shaft
C24	73960	Capacitor — Fixed, ceramic, .01 mf., $+100\%$ — 0% , 500 v. DC	CHASSIS ASSEMBLIES KCS100B, KCS100D & KCS100K		
C25	102559	Capacitor — Fixed, ceramic, 56 mmf., $\pm 5\%$, 500 v. DC	C101	102072	Capacitor—Fixed, ceramic, 5 mmf., ± 1 mmf., 500 v.
C26	102089	Capacitor — Fixed, ceramic, 330 mmf., $+100\%$ — 0% , 500 v. DC	C102		Part of T101
C27	102577	Capacitor—Fixed, headed-lead type, .91 mmf., $\pm 20\%$, 500 v. DC (KRK55A only)	C103	102356	Capacitor—Fixer, ceramic, 820 mmf., $\pm 20\%$, 500 v.
C27	102089	Capacitor—Fixed, ceramic, 330 mmf., $+100\%$ — 0% , 500 v. DC (KRK55B & C only)	C105	78623	Capacitor—Fixed, ceramic, 1000 mmf., $\pm 20\%$, 500 v.
C28	77293	Capacitor — Fixed, ceramic, 470 mmf., $+100\%$ — 0% , 500 v. DC (Part of T1)	C106	102384	Capacitor—Fixed, paper, .01 mf., $\pm 20\%$, 400 v.
C29	102563	Capacitor—Feed through, 1000 mmf. (KRK55B & C only)	C107		Part of T102
C30	71504	Capacitor—Fixed, headed-lead, 0.68 mmf., $\pm 20\%$, 500 v. DC (KRK55B & C only)	C108	79740	Capacitor—Fixed, paper, 0.22 mf., $\pm 20\%$, 200 v.
L5	102572	Coil—FM trap (Part of T1)	C109		Same as C105
L47	102567	Coil—I-F plate coil	C110	77424	Capacitor—Fixed, paper, .01 mf., $\pm 20\%$, 200 v.
L48	102569	Coil—Sound boost coil	C111	102073	Capacitor — Fixed, paper, .0022 mf., $\pm 20\%$, 600 v.
L49	102568	Reactor—Mixer screen and plate R-F choke 8.2 mh. (KRK55A only)	C112A to C112D Incl.	102053	Capacitor—Fixed, electrolytic, 60/80/5/20 mf., -10 $+50/100/100/250\%$, 150/350/-350/40 v. DC
L49	103324	Reactor — Mixer, screen/plate reactor (KRK55B & C only)	C113	102074	Capacitor — Fixed, ceramic, 2200 mmf., $\pm 20\%$, 500 v.
L50	102566	Coil—Mixer plate coil (KRK55A only)	C114	77625	Capacitor — Fixed, ceramic, 220 mmf., $+100$ — 0% , 500 v.
L50	103322	Coil—Mixer plate coil (KRK55B & C only)			
R1	502322	Resistor — Fixed, composition, 22,000 ohms, $\pm 20\%$, $\frac{1}{2}$ watt			
R2	502047	Resistor — Fixed, composition, 47 ohms, $\pm 10\%$, $\frac{1}{2}$ watt			

SYMBOL NO.	STOCK NO.	DESCRIPTION	SYMBOL NO.	STOCK NO.	DESCRIPTION
C115, C116	77953	Capacitor—Fixed, ceramic, 2200 mmf., $\pm 100 - 0\%$, 500 v.	C174	102089	Capacitor — Fixed, ceramic, 330 mmf., $\pm 100 - 0\%$, 500 v.
C117	102075	Capacitor—Fixed, paper, 0.33 mf., $\pm 20\%$, 200 v.	C175	100369	Capacitor—Fixed, paper, .033 mf., $\pm 10\%$, 400 v. (Early production — KCS100B only)
C118		Same as C115	C175	103131	Capacitor—Fixed, paper, .027 mf., $\pm 10\%$, 400 v. (KCS100D, KCS100K and late production KCS100B)
C119		Part of T104	C176	102082	Capacitor — Fixed, electrolytic, 60 mf., $-10 + 50\%$, 150 v.
C121	79251	Capacitor—Fixed, paper, 0.1 mf., $\pm 20\%$, 200 v.	CR101 to CR103 Incl.	100844	Rectifier—Crystal diode
C122	78276	Capacitor — Fixed, ceramic, 150 mmf., $\pm 10\%$, 500 v.	F101	72104	Fuse—.25 amp., 250 v.
C123		Same as C117	L101	79966	Coil—Horizontal frequency
C124	102084	Capacitor — Fixed, ceramic, 820 mmf., $\pm 10\%$, 500 v.	L102		Part of T104
C125	77423	Capacitor—Fixed, paper, 0.1 mf., $\pm 20\%$, 400 v.	L103	102087	Coil—Peaking coil, 300 microhenry
C126	77422	Capacitor—Fixed, paper, .047 mf., $\pm 20\%$, 400 v.	L104	77194	Coil—Peaking coil, 1000 microhenry
C127, C128	76552	Capacitor — Fixed, ceramic, 330 mmf., $\pm 10\%$, 500 v.	L105	102052	Reactor—R.F. filter reactor (KCS100B only)
C129	102077	Capacitor—Fixed, paper, .033 mf., $\pm 20\%$, 200 v.	L105	103409	Reactor—R.F. filter reactor (KCS100D & KCS100K)
C130	77942	Capacitor — Fixed, paper, .0022 mf., $\pm 20\%$, 200 v.	L155	79161	Coil—Horizontal sine wave
C131	78921-A	Capacitor—Fixed, paper, .047 mf., $\pm 20\%$, 200 v.	L156	102083	Reactor—R.F. insulated
C132	102078	Capacitor — Fixed, paper, .0068 mf., $\pm 20\%$, 200 v.	L157	102054	Coil—Width coil
C133	102082	Capacitor—Fixed, paper, .001 mf., $\pm 20\%$, 200 v.	R101	502410	Resistor — Fixed, composition, 100,000 ohms, $\pm 10\%$, $\frac{1}{2}$ w.
C134		Same as C114	R102	502447	Resistor — Fixed, composition, 470,000 ohms, $\pm 20\%$, $\frac{1}{2}$ w.
C135		Same as C126	R104	512333	Resistor—Fixed, composition, 33,000 ohms, $\pm 10\%$, 1 w.
C136	33098	Capacitor — Fixed, ceramic, 10 mmf., $\pm 10\%$, 500 v.	R105	502210	Resistor—Fixed, composition, 1000 ohms, $\pm 10\%$, $\frac{1}{2}$ w.
C137	100124	Capacitor — Fixed, ceramic, 1000 mmf., $\pm 10\%$, 1000 v.	R107, R108	502333	Resistor—Fixed, composition, 33,000 ohms, $\pm 5\%$, $\frac{1}{2}$ w.
C138	79251	Capacitor—Fixed, paper, 0.1 mf., 200 v. DC (KCS100D & KCS100K)	R109	502147	Resistor—Fixed, composition, 470 ohms, $\pm 10\%$, $\frac{1}{2}$ w.
C139	78921-A	Capacitor—Fixed, paper, .047 mf., 200 v. DC (KCS100D & KCS100K)	R110	102055	Control—"On-Off" volume control Includes S102
C151	102086	Capacitor — Fixed, paper, .0056 mf., $\pm 10\%$, 200 v.	R111	102058	Control—Contrast control
C152	101000	Capacitor—Fixed, paper, .01 mf., $\pm 10\%$, 200 v.	R112	102056	Control—Brightness control
C153	102079	Capacitor — Fixed, paper, .0022 mf., $\pm 10\%$, 400 v.	R113	102057	Control—Vertical hold control
C154	79932	Capacitor—Fixed, paper, .022 mf., $\pm 10\%$, 400 v.	R114	502347	Resistor—Fixed, composition, 47,000 ohms, $\pm 10\%$, $\frac{1}{2}$ w.
C155	78921-A	Capacitor—Fixed, paper, .047 mf., $\pm 10\%$, 200 v. (KCS100B only)	R115	502347	Resistor — Fixed, composition, 470,000 ohms, $\pm 20\%$, $\frac{1}{2}$ w.
C155	103269	Capacitor—Fixed, paper, .056 mf., $\pm 10\%$, 200 v. (KCS100D & KCS100K)	R116	502056	Resistor — Fixed, composition, 56 ohms, $\pm 10\%$, $\frac{1}{2}$ w. (KCS100B only)
C156	103130	Capacitor—Fixed, paper, .022 mf., $\pm 10\%$, 200 v. (KCS100B only)	R116	502118	Resistor—Fixed, composition, 180 ohms, $\pm 10\%$, $\frac{1}{2}$ w. (KCS100D & KCS100K)
C156	102227	Capacitor—Fixed, paper, .033 mf., $\pm 10\%$, 600 v. (KCS100D & KCS100K)	R117	502012	Resistor — Fixed, composition, 12 ohms, $\pm 10\%$, $\frac{1}{2}$ w.
C157	102077	Capacitor—Fixed, paper, .033 mf., $\pm 20\%$, 200 v. (KCS100B only)	R118	512318	Resistor—Fixed, composition, 18,000 ohms, $\pm 10\%$, 1 w.
C157	102384	Capacitor—Fixed, paper, .01 mf., $\pm 20\%$, 400 v. (KCS100D & KCS100K)	R120	502482	Resistor — Fixed, composition, 820,000 ohms, $\pm 10\%$, $\frac{1}{2}$ w. (KCS100B only)
C158	77533	Capacitor—Fixed, paper, .001 mf., $\pm 20\%$, 200 v.	R120	502447	Resistor—Fixed, composition, 470,000 ohms, $\pm 10\%$, $\frac{1}{2}$ w. (KCS100D & KCS100K)
C162	76474	Capacitor—Fixed, mica, 82 mmf., $\pm 10\%$, 1000 v.	R121	502318	Resistor—Fixed, composition, 18,000 ohms, $\pm 10\%$, $\frac{1}{2}$ w.
C163	76475	Capacitor—Fixed, mica, 68 mmf., $\pm 5\%$, 1000 v.	R122	502133	Resistor—Fixed, composition, 330 ohms, $\pm 20\%$, $\frac{1}{2}$ w.
C164		Same as C133	R123, R124	502522	Resistor—Fixed, composition, 2.2 meg-ohms, $\pm 20\%$, $\frac{1}{2}$ w. (KCS100B only)
C165	79740	Capacitor—Fixed, paper, 0.22 mf., $\pm 20\%$, 200 v.	R123	502527	Resistor—Fixed, composition, 2.7 meg-ohms, $\pm 10\%$, $\frac{1}{2}$ w. (KCS100D & KCS100K)
C166	102512	Capacitor—Fixed, mica, 330 mmf., $\pm 5\%$, 1000 v.	R124	502515	Resistor—Fixed, composition, 1.5 meg-ohms, $\pm 10\%$, $\frac{1}{2}$ w. (KCS100D & KCS100K)
C167	73594	Capacitor—Fixed, paper, .01 mf., $\pm 5\%$, 600 v.	R125	502327	Resistor—Fixed, composition, 27,000 ohms, $\pm 10\%$, $\frac{1}{2}$ w.
C168	76995	Capacitor—Fixed, paper, .0012 mf., $\pm 5\%$, 600 v.	R126	502322	Resistor—Fixed, composition, 22,000 ohms, $\pm 10\%$, $\frac{1}{2}$ w.
C169		Same as C153 (KCS100B only)	R128	512282	Resistor—Fixed, composition, 8200 ohms, $\pm 10\%$, 1 w.
C169	102216	Capacitor—Fixed, paper, .0015 mf., $\pm 10\%$, 400 v. (KCS100D & KCS100K)	R130	502368	Resistor—Fixed, composition, 68,000 ohms, $\pm 10\%$, $\frac{1}{2}$ w.
C170	102467	Trimmer—25-280 mmf. horiz. drive	R132	502427	Resistor — Fixed, composition, 270,000 ohms, $\pm 10\%$, $\frac{1}{2}$ w.
C171	28417	Capacitor—Fixed, electrolytic, 5 mf. 450 v.	R133, R134	502515	Resistor—Fixed, composition, 1.5 meg-ohms, $\pm 10\%$, $\frac{1}{2}$ w.
C172		Same as C126	R135	502447	Resistor — Fixed, composition, 470,000 ohms, $\pm 10\%$, $\frac{1}{2}$ w.
C173	102088	Capacitor—Fixed, paper, .047 mf., $\pm 20\%$, 600 v. (KCS100B only)	R136	502456	Resistor — Fixed, composition, 560,000 ohms, $\pm 10\%$, $\frac{1}{2}$ w.
C173	78923	Capacitor—Fixed, paper, 0.22 mf., $\pm 10\%$, 400 v. (KCS100D & KCS100K)			

SYMBOL NO.	STOCK NO.	DESCRIPTION	SYMBOL NO.	STOCK NO.	DESCRIPTION
R137	502310	Resistor—Fixed, composition, 10,000 ohms, $\pm 10\%$, $\frac{1}{2}$ w.	R175	502433	Resistor — Fixed, composition, 330,000 ohms, $\pm 10\%$, $\frac{1}{2}$ w.
R138	502233	Resistor—Fixed, composition, 3300 ohms, $\pm 10\%$, $\frac{1}{2}$ w.	R176		Same as R141
R139		Same as R126	R177		Same as R136
R140	522318	Resistor—Fixed, composition, 18,000 ohms, $\pm 10\%$, 2 w.	R178	522282	Resistor—Fixed, composition, 8200 ohms, $\pm 10\%$, 2 w. (KCS100B only)
R141	502410	Resistor — Fixed, composition, 100,000 ohms, $\pm 20\%$, $\frac{1}{2}$ w. (Early production)	R178	522315	Resistor—Fixed, composition, 15,000 ohms, $\pm 10\%$, 2 w. (KCS100D & KCS100K)
R141	502422	Resistor — Fixed, composition, 220,000 ohms, $\pm 20\%$, $\frac{1}{2}$ w. (Late production)	R179	102061	Control—Focus control
R142		Same as R105	R182	502527	Resistor—Fixed, composition, 2.7 meg-ohms, $\pm 10\%$, $\frac{1}{2}$ w. (KCS100D & KCS100K)
R143	502139	Resistor—Fixed, composition, 390 ohms, $\pm 10\%$, $\frac{1}{2}$ w.	S102		Part of R110
R144	502315	Resistor—Fixed, composition, 15,000 ohms, $\pm 20\%$, $\frac{1}{2}$ w.	SR151	102076	Rectifier—Selenium
R145	502415	Resistor — Fixed, composition, 150,000 ohms, $\pm 20\%$, $\frac{1}{2}$ w.	T101	102049	Transformer—Sound take-off — Includes C102
R146	502510	Resistor — Fixed, composition, 1.0 meg-ohm, $\pm 20\%$, $\frac{1}{2}$ w.	T102	102050	Transformer—Ratio detector — Includes C107
R147	502510	Resistor—Fixed, composition, 1.0 meg-ohm, $\pm 5\%$, $\frac{1}{2}$ w.	T104	102051	Transformer—I.F. 2nd pix and detector—Includes C119, L102
R150	502522	Resistor—Fixed, composition, 2.2 meg-ohms, $\pm 10\%$, $\frac{1}{2}$ w. (KCS100D & KCS100K)	T105	102047	Transformer—Power transformer
R151		Same as R141 (KCS100B only)	T151	102048	Transformer—Audio output
R151	502439	Resistor—Fixed, composition, 390,000 ohms, $\pm 10\%$, $\frac{1}{2}$ w. (KCS100D & KCS100K)	T152	102046	Transformer—Vertical output (KCS100B only)
R152	502339	Resistor—Fixed, composition, 39,000 ohms, $\pm 10\%$, $\frac{1}{2}$ w.	T152	103266	Transformer—Vertical output (KCS100D & KCS100K)
R153	502333	Resistor—Fixed, composition, 33,000 ohms, $\pm 20\%$, $\frac{1}{2}$ w.	T153	102045	Transformer—Horizontal output and high voltage transformer—Includes Connector 78238 (KCS100B only)
R154		Same as R146 (Early production—KCS100B only)		78238	Connector—High voltage tube plate cap connector—Part of T153
R154	502512	Resistor—Fixed, composition, 1.2 meg-ohms, $\pm 10\%$, $\frac{1}{2}$ w. (KCS100B late production)		100029	Connector — Power input connector, 2 contact male
R155	502333	Resistor—Fixed, composition, 33,000 ohms, $\pm 10\%$, $\frac{1}{2}$ w. (KCS100B only)		78218	Holder—Fuse holder
R155	503310	Resistor—Fixed, composition, 10,000 ohms, $\pm 10\%$, $\frac{1}{2}$ w. (KCS100D & KCS100K)		102067	Knob—Horizontal frequency coil knob
R156	102060	Control—Height control		100372	Retainer—Horizontal frequency coil knob retainer
R157	502315	Resistor—Fixed, composition, 15,000 ohms, $\pm 10\%$, $\frac{1}{2}$ w. (Early production—KCS100B only)		102213	Shield—Tube shield for V102
R157	502282	Resistor—Fixed, composition, 8200 ohms, $\pm 10\%$, $\frac{1}{2}$ w. (KCS100D & KCS100K & Late production KCS100B)		102085	Socket—High voltage tube, 9 contact, for V154
R158	502515	Resistor—Fixed, composition, 1.5 meg-ohms, $\pm 20\%$, $\frac{1}{2}$ w. (KCS100B only)		74834	Socket—Kine socket
R158	502447	Resistor—Fixed, composition, 470,000 ohms, $\pm 10\%$, $\frac{1}{2}$ w. (KCS100D & KCS100K)		68590	Socket—Tube damper for V155
R159	102059	Control—Vertical linearity		31251	Socket—Tube, octal, for V153
R160, R161		Same as R146 (KCS100B only)		76971	Socket—Tube, 9 pin for V101, V103
R160	502518	Resistor—Fixed, composition, 1.8 meg-ohms, $\pm 10\%$, $\frac{1}{2}$ w. (KCS100D & KCS100K)		102070	Socket—Tube socket, 9 pin for V102
R161	502412	Resistor—Fixed, composition, 120,000 ohms, $\pm 10\%$, $\frac{1}{2}$ w. (KCS100D & KCS100K)		102071	Socket—Tube, 9 pin miniature for V151, V152
R162	502347	Resistor—Fixed, composition, 47,000 ohms, $\pm 10\%$, $\frac{1}{2}$ w.		102068	Spring—Kine grounding spring
R165	512282	Resistor—Fixed, composition, 8200 ohms, $\pm 10\%$, 1 w. (Early production—KCS100B only)		102069	Strap—Kine mounting strap assembly
R165	512256	Resistor—Fixed, composition, 5600 ohms, $\pm 10\%$, 1 w. (Late production—KCS100B only)		103452	Support—Fishpaper antenna cable support for KCS100D chassis
R165	503239	Resistor—Fixed, composition, 3900 ohms, $\pm 10\%$, 1 w. (KCS100D & KCS100K)			YOKE AND MAGNET ASSEMBLY
R166	502512	Resistor — Fixed, composition, 1.2 meg-ohms, $\pm 10\%$, $\frac{1}{2}$ w.		102066	Fork — Deflection yoke hood mounting fork
R168	502415	Resistor — Fixed, composition, 150,000 ohms, $\pm 10\%$, $\frac{1}{2}$ w.		102064	Hood—Deflection yoke hood assembly
R169	502356	Resistor—Fixed, composition, 56,000 ohms, $\pm 10\%$, $\frac{1}{2}$ w.		102063	Magnet—Centering magnet assembly
R170	502282	Resistor—Fixed, composition, 8200 ohms, $\pm 10\%$, $\frac{1}{2}$ w.		102065	Magnet—Ion trap magnet
R171	512410	Resistor — Fixed, composition, 100,000 ohms, $\pm 10\%$, 1 w.		102062	Yoke—Deflection yoke (KCS100B only)
R172	502418	Resistor — Fixed, composition, 180,000 ohms, $\pm 10\%$, $\frac{1}{2}$ w.		103267	Yoke—Deflection yoke (KCS100D & KCS100K)
R173	502568	Resistor — Fixed, composition, 6.8 meg-ohms, $\pm 10\%$, $\frac{1}{2}$ w.			SPEAKER ASSEMBLY 972131-1
R174	512347	Resistor—Fixed, composition, 47,000 ohms, $\pm 10\%$, 1 w.		102104	Speaker — $3\frac{1}{2}$ " P.M. speaker complete with cone and voice coil (3.2 ohms)
					MISCELLANEOUS
				102382	Antenna — Gray polystyrene antenna — For Models 8PT7031 & 8PT7031T
				102383	Antenna — Ivory polystyrene antenna — For Models 8PT7034 & 8PT7034T
				102381	Antenna—Red polystyrene antenna—For Models 8PT7030 & 8PT7030T
				102800	Antenna—Black polystyrene antenna — For Models 8PT7032 & 8PT7032T

SYMBOL NO.	STOCK NO.	DESCRIPTION	SYMBOL NO.	STOCK NO.	DESCRIPTION
	102113	Baffle—Speaker baffle and cloth assembly		102098A	Handle — Case carrying handle—ivory—high impac polystyrene — For Models 8PT7014, 8PT7034 & 8PT7034T
	102380	Board—Antenna terminal board assembly for 8PT7030 & 8PT7030T Series receivers		102092A	Knob—Channel selector knob—gray
	103453	Board—Antenna plate terminal board — red—for Model 8PT7010		102091	Knob—Fine tuning control knob
	103454	Board—Antenna plate terminal board — gray—for Model 8PT7011		102093	Knob—"On-Off" volume or contrast control
	103455	Board—Antenna plate terminal board — ebony—for Model 8PT7012		102095	Knob—Vertical hold or brightness control knob
	103456	Board—Antenna plate terminal board — ivory—for Model 8PT7014		102099	Link—Case carrying handle link brass
	102116	Button—Plug button — red — For Models 8PT7010, 8PT7030 & 8PT7030T		102063	Magnet—Centering magnet assembly
	102117	Button—Plug button—gray — For Models 8PT7011, 8PT7031 & 8PT7031T		102065	Magnet—Ion trap magnet
	102801	Button—Plug button—Black—For Models 8PT7012, 8PT7032 & 8PT7032T		102107	Mask — Kinescope mask assembly zinc alloy for 8PT7030 & 8PT7030T Series receivers
	102118	Button—Plug button—ivory — For Models 8PT7014, 8PT7034 & 8PT7034T		103462	Mask—Kinescope mounting mask assembly for 8PT7010 Series receivers
	102343	Cord—Power cord		77033	Nameplate—"RCA Victor" nameplate — polished brass
	102100	Cover—Cover and case assembly—red—for hidden controls—For Models 8PT-7010, 8PT7030 & 8PT7030T		103457	Plate—Antenna plate assembly—red—for Model 8PT7010
	102101	Cover—Cover and case assembly—gray—for hidden controls—For Models 8PT-7011, 8PT7031 & 8PT7031T		103458	Plate—Antenna plate assembly—gray — for Model 8PT7011
	102798	Cover—Cover and case assembly—black—for hidden controls—For Models 8PT-7012, 8PT7032 & 8PT7032T		103459	Plate—Antenna plate assembly—ebony—for Model 8PT7012
	102102	Cover—Cover and case assembly—ivory—for hidden controls—For Models 8PT-7014, 8PT7034 & 8PT7034T		103460	Plate—Antenna plate assembly—ivory — for Model 8PT7014
	102103	Cushion — Cover and case assembly cushion—nylon—(2 req'd)		102108	Retainer—Safety glass retainer for 8PT-7030 & 8PT7030T Series receivers
	102114	Fastener — Speaker baffle fastener (2 req'd)		103461	Retainer—Safety glass retainer for 8PT7010 Series receivers
	102109	Glass—Safety glass		102115	Screw—Knurled screw for cabinet stand mounting, brass 1/4-28 thd., 23/32" long
	102096A	Handle — Case carrying handle—red—high impac polystyrene — For Models 8PT7010, 8PT7030 & 8PT7030T		102094	Spring—Knob retaining spring
	102097A	Handle — Case carrying handle—gray—high impac polystyrene — For Models 8PT7011, 8PT7031 & 8PT7031T		102110	Support — Handle support — red — For Models 8PT7010, 8PT7030 & 8PT7030T
	102797A	Handle—Case carrying handle—black—high impac polystyrene — For Models 8PT7012, 8PT7032 & 8PT7032T		102111	Support — Handle support — gray — For Models 8PT7011, 8PT7031 & 8PT7031T
				102799	Support—Handle support — black — For Models 8PT7012, 8PT7032 & 8PT7032T
				102112	Support — Handle support — ivory — For Models 8PT7014, 8PT7034 & 8PT7034T
				102062	Yoke—Deflection yoke (KCS100B only)
				103267	Yoke—Deflection yoke (KCS100D & KCS-100K)